TULARE COUNTY AVIATION ELEMENT

AND AIRPORT SYSTEM PLAN

TULARE COUNTY AVIATION ELEMENT

AND AIRPORT SYSTEM PLAN

Approved: Tulare County Planning Commission
Resolution No. 6117, February 27, 1985

Adopted: Tulare County Board of Supervisors
Resolution No. 85-0491, April 2, 1985

Prepared for
Tulare County Association of Governments
July, 1981
by
Daniel, Mann, Johnson & Mendenhall
and QUAD Consultants

Updated for County of Tulare
by
Tulare County Building and Planning Department

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES (continued)

LIST OF TABLES (continued)

PLAN SUMMARY

The detailed document which follows comprises the Aviation Element and Airport System Plan for the County of Tulare, California. Prepared in 1981, this Plan updates and supersedes the previous (1971) Tulare County Airport Master Plan. The purpose of the Plan is to provide policies and guidelines for the continued improvement, maintenance and operation of the County-wide airport system, including both public and private airports.

The Plan applies to the geographic area represented by Tulare County, although it accounts for the influence exerted on local aviation activities by airport facilities located in other, nearby counties. The Plan also reflects the extent to which County-wide aviation activity is influenced by two environmental factors: one physical, the presence of the Sierra Nevada mountains to the east and the Tehachapi mountains to the south; and one climatological, the dense ground fog prevalent on the San Joaquin Valley floor during winter months.

The airport system which currently serves the County's aviation needs can be generally subdivided into three components, publicly-owned and operated airports, privately-owned airports open to public general aviation use, and private "special use" airfields and airstrips. There were, at the time this study was begun, seven public airports in operation countywide. Since the Plan was first drafted, however, the Three Rivers Airport has been irrevocably closed, and the ownership of the Woodlake Airport has changed and is now operated as a private, public-use facility. Tulare County owns and maintains two of the remaining public facilities; the other three are owned and operated under the aegis of the cities of Visalia, Porterville and Tulare. Five privately-owned facilities, Green Acres, Alta, Eckert, Pruner and Woodlake airports, are open to public general aviation use. The remaining airfields and airstrips which presently exist throughout the County consist principally of bases for agricultural aviation activities, such as aerial applicators, or are private landing strips or fields serving ranches, farms and rural residences.

Aviation activity County-wide has grown substantially over the past decade. There has been nearly a 100 percent increase in the number of aircraft based in the County since 1970. Annual operations at local airport facilities have increased by about 75 percent over the same period. In 1970, there were 1.39 aircraft per 1,000 population based in the County, compared to a ratio of 2.01 per 1,000 in 1980.

On the basis of County population and economic growth, historical trends in aviation activity levels, changes in technology, ownership patterns and fuel costs, and other criteria, future aviation demand has been forecasted for the County by the California Department of Aeronautics. These forecasts, which have been incorporated into the State's California Airport System Plan (CASP), project continued substantial growth in County-wide aviation activity levels and demand on airport facilities. The predominate majority of forecasted aviation demand will be for general aviation. Scheduled commuter air carrier activities currently comprise only 1.1 percent of all local aviation activity, and it is not anticipated that this proportion will change substantially. Similarly, air cargo activities in the County are comparatively minimal, and no significant increase in air cargo activity as a proportion of overall aviation County-wide is forecasted. It should also be noted that no changes in general aviation technology are foreseen over the duration of the planning period (through the year 2000) which would substantially affect County-wide airport system needs.

Three realistic alternatives are available to the County, its incorporated cities and the private sector in approaching the continued operation and maintenance of the local airport system. The first of these would entail no significant expansion of or improvements to any of the existing airport facilities in the County, and would be characterized simply by maintenance of the existing system in essentially its present condition. No new system "capacity" would be generated under this alternative to meet forecasted increases in present levels of demand. The second alternative approach would entail some improvements to a limited number of airport facilities, providing some additional capacity, and maintenance of the remainder of the system at present levels. The proposed facility improvements contemplated under this alternative would be concentrated on a slightly reduced number of public airports, enabling the expenditure of public funds for airport system maintenance and enhancement to be utilized as efficiently as possible. The third alternative would entail an aggressive airport system expansion and improvement program, with public sector acquisition of additional airport facilities and extensive capital investment for individual facilities improvements. The first alternative would fall considerably short of accommodating forecasted levels of County-wide aviation demand through the end of the planning period. The second alternative would, through both public and private facilities, accommodate a large portion of the forecasted demand, but not all. The third alternative would fully accommodate any forecasted levels of demand through the year 2000.

A set of evaluative criteria has been developed, and each of the foregoing alternatives has been weighed, utilizing these criteria, to determine the comparative "desirability" of any one alternative over the others. Factors such as financial feasibility, environmental soundness, demand-to-capacity implications, conformance to other existing public policy and priorities, and general public acceptability were considered. Based on this evaluative process, the second alternative, consolidation and limited improvement of the existing airport system, has been determined to be superior and forms the basis for this updated system plan.

The recommended Plan can be summarized as consisting of the following elements:

- A consolidation of the present distribution of public airport facilities in the County, emphasizing the expenditure of public funds for the preservation, maintenance and improvement of five airports: Visalia, Porterville, Tulare, Woodlake, and Sequoia Field. Three Rivers Airport would remain physically, permanently closed. Harmon Field would be retained under County ownership, but with a revised lease structure encouraging additional private improvements to the facility and enhancing its financial potential to the County.

- Public agency policies accommodating the continued operation and maintenance of various privately-owned facilities open to general public use.

- Public agency policies accommodating the development and utilization of private "special use" aviation facilities, so long as conflicts with other appropriate human and land uses can be avoided.

The Plan is predicated upon the assumption that:

- The public sector, in view of acknowledged financial constraints, cannot reasonably satisfy all forecasted aviation demand in the County.

- Private sector initiatives to satisfy unmet aviation demand forecasts are appropriate and beneficial to the extent they do not detract from related public sector efforts.

Reflecting both the recommended County-wide airport system plan and other adopted transportation, land use, social and economic policies of the County and local cities, the following aviation-specific policies have been formulated and set forth to guide Plan implementation:

- Aviation activities constitute an important component of the overall regional transportation system. Accordingly, maintenance and enhancement of the County-wide airport system is regarded to be a substantial public interest, meriting continued County and city participation.

- County-wide public airport system development, operation and maintenance should be directed toward servicing as much of forecasted aviation demand as possible within reasonable fiscal constraints. Publicly-owned and operated airports, however, shall not be expected to satisfy all anticipated demand for aviation facilities and related services in the County.

- Development of the County's public airports by the appropriate and responsible public agencies, in conformance with the County Aviation Element and Airport System Plan, shall be encouraged and, in whatever reasonable means possible, facilitated.

- Public agency ownership and operation of airport facilities should be confined solely to facilities judged to provide wide public benefit as set forth in the County Airport System Plan.

- The development and maintenance of privately-owned and operated airport facilities in Tulare County shall be considered desirable as an alternative to public sector satisfaction of all forecasted aviation demand, so long as such development and operation does not conflict with established land use or other public policies and does not result in adverse impacts on the operation, maintenance and long-term viability of the airport facilities designated in this Plan for continued public ownership and/or operation.

The approximate cost, in 1981 dollars, to implement the Plan as proposed through the year 2000 has been fixed at slightly over $5.5 million. A combination of funding sources is assumed, including federal and State grant assistance. Based on current eligibility requirements for federal and State funding assistance (exclusive, however, of priorities) approximately two-thirds of the total estimated Plan implementation costs could be funded from non-local sources. An annualized distribution of these costs, based on potential eligibility, is presented in the table below:

PROJECTED PLAN IMPLEMENTATION COSTS -
TOTAL AND LOCAL SHARE - COUNTYWIDE
ANNUAL AVERAGE IN 1981 DOLLARS

Period	Total Improvement Project Costs (Per Year)	Local Share of Improvement Costs (Per Year)
1980-85	$412,000	$150,000
1985-90	$429,000	$150,000
1990-95	$154,000	$ 63,000
1995-2000	$110,000	$ 11,000

Many of the Plan's implications for the County-wide airport system, and the timetable for implementation of much of the Plan, are long-range in nature. Several important recommendations are set forth in the Plan, however, to which immediate attention should be given. These recommendations are summarized below:

- The existing lease arrangement between the County and its concessionaire at Sequoia Field should be evaluated to identify any necessary revisions, given the increased long-term importance placed upon this airport by the recommended Plan.

- The lease agreement held by the County for Harmon Field should also be analyzed to determine what revisions may be necessary, and in what manner these revisions may be accomplished, to improve the current financial position of the County with respect to the facility. The initiation of a long-term lease arrangement between the County and private concessionaires should be explored as a means of encouraging private development of the facility. Lease proceeds should be expended by the County for maintenance of the airport, with excess proceeds, if any, deposited to the County's general fund.

- The Plan calls for the Three Rivers Airport to remain closed for safety reasons. During the course of preparing the Plan, the State Department of Aeronautics revoked the permit for this facility and the County subsequently physically closed the airport to operations by removing the runway surface.

- A long-term lease agreement, public acquisition, or other arrangement which makes Woodlake Municipal Airport eligible for development funding assistance from the California Department of Aeronautics and the FAA as a public airport should be established.

- The recommended Plan places emphasis on the development of several public airports in Tulare County. Each of these airports will require suitable, up-to-date master plans which define the specific facilities requirements and development schedule for airport improvements. The status of each airport's current master plan should be investigated to determine any necessary revisions or updating based on the adoption of the Aviation Element and County Airport System Plan.

CHAPTER 1

1.0 INTRODUCTION

This report presents a long-term System Plan for the development, operation and maintenance of airports and airfields designed to support the aviation requirements of Tulare County residents, businesses and visitors. The Plan includes an airport improvement program formulated to ensure the efficient, organized and environmentally sound development of Tulare County's airport facilities and aviation resources. In addition, the Plan comprises one element of the continuing, multi-modal regional transportation planning process under the auspices of the Tulare County Association of Governments (TCAG).

The following introductory section describes the purpose and scope of the Plan as well as its specific goals and objectives. This discussion is followed by a brief examination of the Plan's relationship to federal, State and Tulare County planning programs related to aviation and airport development. The last portion of this introductory section presents a summary outline of the complete Aviation Element contents and Airport System Plan.

1.1 PURPOSE AND SCOPE OF THE PLAN

Tulare County first addressed local aviation characteristics and airport development needs as part of its long range planning process in 1949, when a study was completed and adopted by the Board of Supervisors in the form of a comprehensive County Airport Master Plan. This original Master Plan was updated and superseded by the 1971 Tulare County Master Plan, however, a number of important changes have taken place in aviation, particularly during the last several years. At the same time, Tulare County has experienced substantial population and economic growth not fully anticipated at the beginning of the decade. Accordingly, the 1971 Plan has served its purpose, but now is out of date and is no longer an adequate guide for the future development and operation of the County-wide airport system.

During the 1970's, significant growth in commercial air transportation was experienced nationwide, particularly in California. However, the nature of commercial airline services has been changing, with more small commuter airlines providing local and feeder service to intermediate and long-distance domestic and international carriers. During this same period, general aviation activity has shown significant growth, particularly in the "business flight" segment.

Despite the recessions of 1974-75 and 1979-80 and rapid increases in fuel prices, general aviation aircraft sales and activities have remained strong. However, it is apparent that during 1980 and 1981 private aviation activities have given way somewhat to more business aviation operations. Recent airline deregulation has also brought increasingly significant changes to the certificated airline industry in the United States, with air carriers permitted to enter and leave markets much more readily than heretofore and also to alter their fares and schedules. This has been evidenced recently by the nationwide fare increases instituted by many air carriers during February 1981.

The initial results of deregulation have been varied but the general trend has been toward more carriers serving the higher density, lucrative routes, leaving the low-density and short-haul local services, which have traditionally been less profitable, to the commuter airlines. It is apparent that this trend will continue for an undetermined period until the initial adjustment to the effects of deregulation of operations has run its course.

One of the more important impacts of this certificated carrier change has been to reduce the need for long and high-load capacity runways and sophisticated terminal facilities in smaller communities. At the same time this action has increased the need for improved navigation and landing aids and adequate terminal facilities, although relatively small, at numerous new airports serving smaller communities not previously extended direct air service.

In the San Joaquin Valley, the main agricultural region of the State and one of the largest producers of food products in the United States and the world, foodstuffs have increased substantially in value. This places potentially increased importance on air freight shipments of perishable articles and could add to the demand for air services at rural airports. Also important is the continuing significance of agricultural aviation in the form of crop dusting, which has been used widely in the region since the end of World War II.

General aviation aircraft, operations, and passenger movements have increased steadily during the 1970s in the County as exemplified at Visalia Airport where hangar and tie-down spaces have increased significantly. Other airports in the county have also experienced significant increases in demand which are described in detail later in this report.

The most significant change in the local aviation picture in the last few years has been the discontinuance of certificated airline service to Visalia. During this period, certificated services were being reduced in a number of markets throughout the county, while simultaneously commuter or scheduled air-taxi airlines were increasing services, schedules and the capacities of the aircraft they deployed. In many instances, where the certificated airlines were withdrawing, the commuter airlines entered the market offering substitute services. In the San Joaquin Valley, these services were designed to provide connection with airports at San Francisco, Oakland and Los Angeles, where air travelers could connect with certificated regional trunk carriers.

In summary, there has been growth and change in Tulare County aviation activity over the period 1970-80 as a result of both the general evolution of the aviation industry and the physical, social and economic development of Tulare County. This development dictates a County-wide planning process that anticipates, addresses and provides for the management of a number of significant elements affecting the County's future. Based on current and anticipated levels of aviation activity in Tulare County, the maintenance and continued development of Tulare County's aviation environment is an important part of this future.

In view of the foregoing, the purpose of the updated County Aviation Element and Airport System Plan presented herein is to refine and strengthen the existing 1971 Plan and render it more reliable and useful as a guide to aviation development in Tulare County during the 1980's. Consistent with this purpose, the updated Plan is broad in scope, encompassing elements contained in the existing Plan as well as new issues, requirements and functions associated with the evolving airport system in the County. In complete form, the updated Plan supersedes the 1971 plan document.

The updated Plan will comprise a portion of the existing Circulation Element of the County's General Plan. The Plan described will also function as the aviation or airport component of the Regional Transportation Plan for Tulare County. It

will facilitate the incorporation of both short- and long-range programs of airport development into the framework of comprehensive County transportation planning programs. This will provide a basis for the coordination of airport planning with ongoing transit, highway and other forms of local and regional transportation planning. Further, the Plan will serve as a resource to the continuing development of the California and National Airport System plans maintained to ensure the safe and efficient availability of domestic air transportation.

1.2 GOALS AND OBJECTIVES

The goals and objectives of the Plan are straighforward, simple,and in harmony with the general planning goals of the County, as well as those of the State of California and the federal government, as represented by the Federal Aviation Administration (F.A.A.). Planning objectives include:

1) The identification of existing and future airport system requirements for the County;

2) Analysis of existing airport plans and programs to determine their ability to meet future airport system requirements;

3) The development and evaluation of alternative future airport systems for the County and selection of the most efficient and effective system; and

4) The preparation of a recommended airport system plan to include an airport and airfield improvement program, as well as an implementation plan.

Taken collectively, these objectives define the basic planning process utilized in the development of this Plan. As noted above, these objectives also coincide with other established goals and objectives applicable to the region. The following paragraphs present the general goals, objectives and policies adopted by the Tulare County Association of Governments, as contained in the Regional Transportation Plan[1], which are of particular relevance to local aviation and airport system planning.

---

1 1984 Regional Transportation Plan, Tulare County Association of Governments, Transportation Planning Agency, September, 1984.

GOAL 1 - TRANSPORTATION:

Promote an efficient transportation system for the movement of people and goods which enhances the physical, economic and social environment.

OBJECTIVES:

A) Develop and maintain a road system which is convenient, safe and efficient.

B) Provide a coordinated transit system which can reasonably meet the needs of the citizens of Tulare County.

C) Promote the growth and use of both public and private airports to satisfy projected aviation demand.

D) Encourage the growth of railroad passenger and freight usage.

F) Provide a transportation system which efficiently transports goods.

G) Maximize the use and efficiency of the existing transportation system by using transportation system management strategies.

POLICIES:

1) Priority will be given to the maintenance of the existing system.

2) TPA supports the completion of critical segments of the State Highway System.

3) TPA supports coordinated transportation planning and programming.

4) The transit system, whenever possible, should interconnect with other modes of transportation.

5) TPA supports the development of a multi-modal terminal facility to be located at the Visalia Municipal Airport.

6) Maintenance and enhancement of the Countywide airport system is regarded as a substantial public interest, meriting continued County and City participation.

7) The public airport system development, operation and maintenance should be directed toward servicing as much of forecasted aviation demand as possible within reasonable fiscal constraints.

8) Development of the County's public airports by the appropriate and responsible public agencies, in conformance with the County Aviation Element and Airport System Plan, should be encouraged and, in whatever reasonable means possible, facilitated.

9) Public agency ownership and operation of airport facilities should be confined solely to facilities judged to provide wide public benefit as set forth in the County Airport System Plan.

10) The development and maintenance of the existing privately-owned and operated airport facilities in Tulare County should be considered desirable.

11) TPA recommends the California Transportation Commission replace the current process for funding aviation projects with the following:

A. A regional minimum allocation fund which can be distributed by the RTPA. This will replace the $5,000 allocation to each airport and will allow a project to be built every year instead of the current stockpiling of funds.

B. A State discretionary aviation fund similar to the existing program, placing emphasis on regional needs vs. fixed base aircraft.

12) TPA supports the extension of rail passenger service to Los Angeles and Sacramento.

13) TPA encourages AMTRAK to reroute passenger rail service to the Southern Pacific track, thereby serving a larger population than the existing route.

14) At such time that AMTRAK does shift rail service to the Southern Pacific track, TPA will support the development of a station in conjunction with the multi-modal facility envisioned at Visalia Municipal Airport.

15) TPA encourages the interaction of truck, rail, and air freight movements.

16) Special consideration should be given to transportation programs which improve the operational efficiency of goods movement, especially truck movements.

1.3 RELATIONSHIP TO FEDERAL, STATE AND TULARE COUNTY PLANNING

The Tulare County Aviation Element and Airport System Plan, in addition to supporting the planning goals and objectives of the County described earlier, serves to sustain State and federal planning affecting aviation in the region. In effect, it represents a locally-developed plan cognizant of State and federal plans, programs and laws related to aviation in Tulare County. Regulations and plans such as the California State Aeronautics Act, F.A.A. Advisory Circulars dealing with airport system planning (A.C. No. 150/5050-5) and both the National and California State Airport System Plans have been referenced throughout the development of this Plan.

In addition, a Project Advisory Committee consisting of local aviators, airport operators, planning representatives and citizens of the County, was formed to provide broad input to the development of this Plan. This committee worked in concert with the TCAG Technical Advisory Committee and Board of Directors to ensure a coordinated and comprehensive planning process reflecting consistency with local and regional policies, priorities and concerns.

The Plan is not intended to restrict local airport operators from determining the nature, magnitude or timing of specific airport improvement projects. Rather it is designed to serve only as a guide, particularly emphasizing public funding priorities associated with County-wide airport system development.

1.4 REPORT OUTLINE

Documentation of the County-wide Aviation Element and Airport System Plan must appropriately include sufficient data and background material to provide an adequate framework for Plan policies and the related implementation program. The following brief outline summarizes the contents presented in this report.

1.0 Introduction: A statement of purpose of the study, goals and objectives, planning relationships and report contents.

2.0 Existing Conditions: A description of the study area and its characteristics, including the aeronautical environment.

3.0 Airport System Demand and Capacity Requirements: An analysis of aviation activity and forecasts, as well as facility supply and future capacity requirements.

4.0 Alternative Airport Systems: A description and evaluation of alternative airport systems for the County.

5.0 Recommended Plan: Presentation and details of the recommended Airport System Plan.

6.0 Implementation Program: The recommended schedule and program for implementing the Plan.

CHAPTER 2

2.0 EXISTING CONDITIONS

This chapter describes existing geographic, physical, environmental and socioeconomic characteristics of the Tulare County area relevant to understanding the conditions affecting the local and regional aviation environment. The present extent and nature of aviation facilities and the current scope of aviation activities in the County are also described herein in the form of a comprehensive airport inventory, a characterization of airspace and navigation conditions and a summary of existing air trade activity. The data and description of conditions and trends presented in this chapter form the background for the airport system demand and capacity requirements analysis discussed in the following chapter and represent the framework within which the policies and recommendations ultimately implemented as a result of this Plan must be implemented.

2.1 CHARACTERISTICS OF THE STUDY AREA

The 1971 Tulare County Airport Master Plan, an element of the Tulare County General Plan, which this Plan amends and supersedes, went to some length to establish criteria for and identify a regional air trade area, consisting essentially of the four southern San Joaquin Valley counties, specifically Fresno, Tulare, Kings, and Kern.[1] Data generated during the course of this study, however, suggests that the actual extent of the area which directly both influences and is affected by Tulare County aviation activities is somewhat smaller than the combined four-county area identified in the 1971 Plan.

For the purposes of this Plan, therefore, the study area, or planning area, is considered to be defined by the boundaries of Tulare County. It must be noted, however, that the nature of aviation activities requires that the Plan include some consideration of aviation-related conditions and trends, and airport and airfield facilities, occurring outside the County to the extent the County-wide aviation environment is affected by them. Accordingly, although the preponderant majority of background and data set forth in this Plan pertains specifically to Tulare County, some instances occur throughout this document in which information and analysis regarding facilities and/or conditions in the overall regional environment surrounding the County are presented.

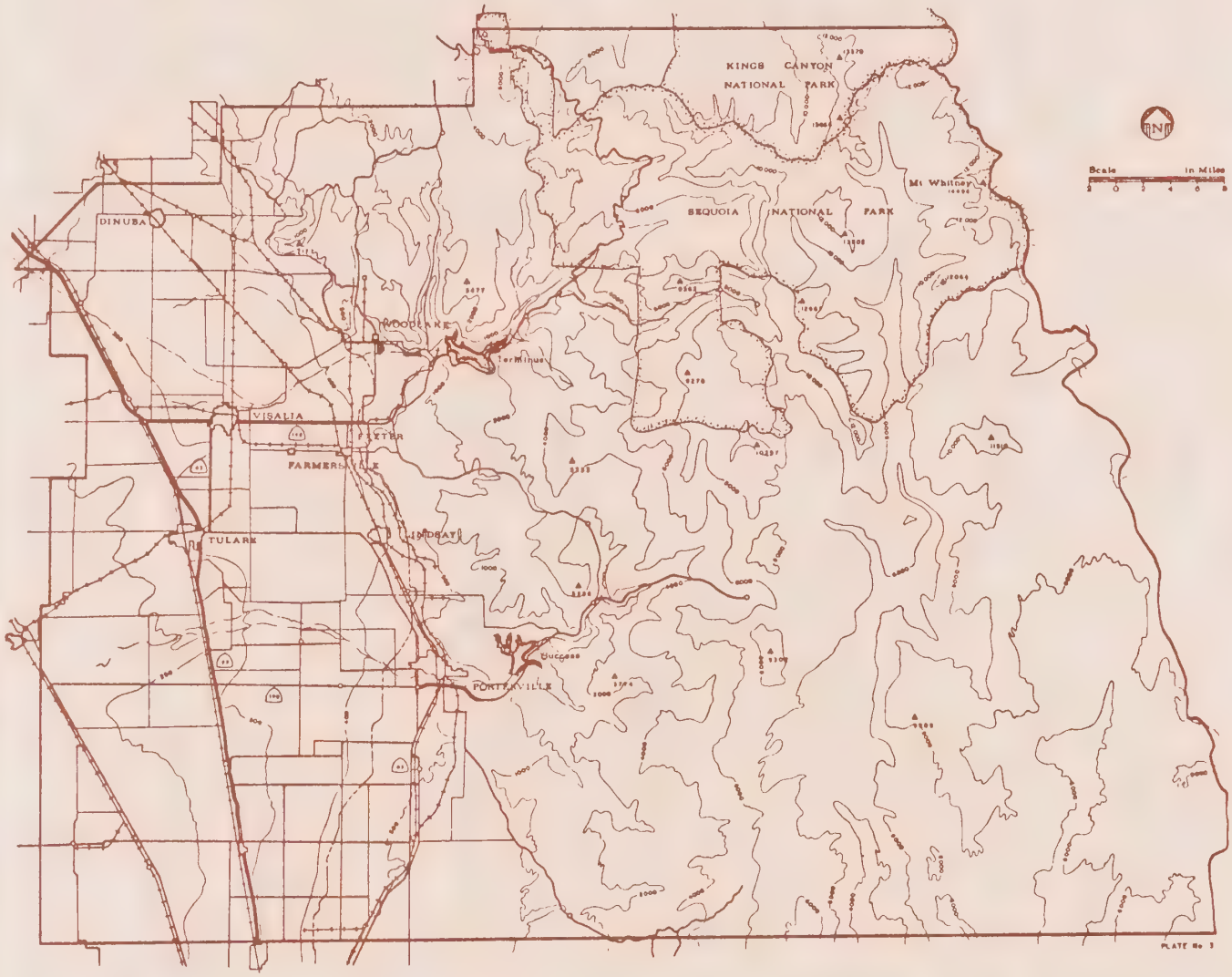
2.1.1 Study Area Location and Size

Tulare County is located slightly south and east of the geographic center of the State of California, encompassing an area of approximately 4,863 square miles. The County is bounded on the east by Inyo County and the crest of the Sierra Nevada Mountain range, on the north by Fresno County, on the west by Kings County and on the south by Kern County (see Figure 2-1).

---

[1] Tulare County Airport Master Plan, Tulare County Planning Department, April, 1971. pg. 4-5.

FIGURE 2-2



PLANNING AREA TOPOGRAPHY

There is a strong correlation between the general topography and historic land uses in Tulare County and the surrounding region. The comparatively flat, fertile valley floor has been one of the most productive agricultural areas in the world for decades; predictably, however, Tulare County's urban centers, as well as those in other counties in the region, have evolved on the valley floor as well, growing in response to the demand for housing and commercial and professional services attendant to the valley's agri-industry. More recently, a non-agricultural industrial employment base has developed in the valley, taking advantage of available, economical land, or a labor force augmented by agricultural workers displaced by increased mechanization of field work, and of receptive public agency development climates. As urban development has consumed an increasing share of prime agricultural land, the County and many of its incorporated cities have developed policies to ensure that future urbanization takes place in a controlled and orderly fashion and is sensitive to the desirability of preserving as much agricultural land as possible.

Designated Urban Improvement Areas, Urban Development Boundaries and Urban Area Boundaries adopted for each urban community in the County, combined with adopted city and County general plan policies, exclusive County Agricultural zoning for valley floor unincorporated areas outside the specified urban area boundaries, and the continued extensive participation in Williamson Act (agricultural preserve) contracts by County agricultural land-holders are all reflective of a continuing regional commitment to the County's underlying agriculturally-oriented economic base and the protection of the land resources necessary thereto.

The 1971 Plan presumed that, in general, the distribution of population and urban land uses throughout the County would remain proportionately similar to existing conditions. Some additional growth in the County's foothill region was anticipated in response both to the desirability of preserving valley floor lands for agricultural use and to the effects of anticipated recreational development in the foothills and Sierra Nevada. To date, however, although development pressures have increased in the Three Rivers and Springville vicinities in recent years, no pronounced shifts of population distribution toward the foothill communities has occurred. As envisioned in the 1971 Plan, no new communities have been established in the County over the past decade, nor are any currently foreseen in the future. Urban expansion over the past decade has occurred principally in and around the County's existing population centers, and it is likely, in view of both practical economics and established public policies, that this trend will continue for the duration of the period addressed by this Plan.

2.1.3 Climate

The climate of the southern San Joaquin Valley and Tulare County is of the Mediterranean type, characterized by hot, dry summers, with cooler temperatures and increased precipitation and overall humidity during the winter. Over ninety percent of the region's annual precipitation occurs between November and April. Below the 500-foot elevation, the valley annually receives less than 15 inches of precipitation. The driest areas in the County are in the southwest corner near the community of Alpaugh (eight inches annually), while the wettest area in the Valley portion of the County is at Lemon Cove (fifteen inches annually), located near the mouth of the Kaweah River canyon. The mean annual precipitation in Visalia is less than eleven inches. On the average, over forty rainy days are experienced each year.

Although light amounts have fallen, snow is a rare occurrence on the valley floor. Seasonal snowfall amounts at low elevations are very light - about one inch at elevations of 1000 feet - increasing to about 250 inches annually above 8,000 feet. At intermediate levels, where snow settles or melts at intervals during the winter, the accumulation on the ground is ordinarily not great. At higher elevations, however, snow remains throughout the winter. Accumulations to seventy or eighty inches are not uncommon.

Winds in the San Joaquin Valley tend to flow parallel to the Coast Range-Sierra Nevada axis. On the Valley floor in Tulare County, the prevailing wind direction is from northwest to southeast. However, from November through March, the prevailing winds often reverse direction, blowing from southeast to northwest during periods of storm system movement inland from the Pacific Ocean. Average wind speeds on the Valley floor are usually low, typically about six miles per hour at Visalia. The strongest winds in the valley portion of the County flow from the Southeast in the winter and from the northwest the remainder of the year. Average wind speeds are generally lowest in November and greatest in May and June. Wind speeds reaching thirty miles per hour at low elevations in the valley occur only occasionally.

Wind currents in the more mountainous terrain of the County are determined by topographic characteristics and vary greatly from location to location. In general, however, there is a tendency for air currents to move upslope during the day and downslope at night. Wind speeds exceeding fifty miles per hour are occasionally experienced at higher elevations in the County.

Among the County's climatological characteristics, of greatest significance in terms of impact on transportation and aviation is the seasonal fog prevalent throughout the valley during the months of December, January and February, with occasional incidents in November. Visibilities during the nighttime periods of fog are often reduced to virtually zero. Zero windspeeds are common during these foggy periods, which may persist continuously for two to three weeks. During daylight hours, the fog frequently lifts to a few hundred feet above the surface of the valley and presents the appearance of a heavy, solid cloud layer. The low fog stratus layer generally ravels at its outer edges and dissipates near the foothill areas of the County. In general, the top of the stratus layer seldom exceeds 2,000 feet.

During foggy periods, visibility and ceilings are reduced considerably below Visual Flight Rules (VFR) minimums and occasionally below Instrument Flight Rules (IFR) minimums (see Table 2-1). Several airports in the County located along the base of the foothills are less affected by fog because of localized wind circulation characteristics. The Woodlake and Porterville airports experience less fog during the winter as a result of wind currents flowing down the Kaweah and Tule River canyons, respectively. Eckert Field, near Lindsay, was originally constructed as a "fog free" air field and as a bad-weather alternative to the World War II primary training bases located at Sequoia and Rankin Fields. Wind currents emanating from the Frazier Valley area are largely responsible for the comparatively fog-free conditions at Eckert Field.

It should be noted that the figures presented in the table which follows are averages only for the southern valley region. Actual VFR/IFR conditions at individual airfield and airport facilities throughout the County and the rest of the valley may vary, depending upon unique local characteristics.

TABLE 2-1
Average VFR/IFR Conditions, Month-by-Month
Southern San Joaquin Valley

Month	Percent VFR Conditions	Percent IFR Conditions	Month	Percent VFR Conditions	Percent IFR Conditions
January	84	16	July	100	0
February	93	7	August	100	0
March	99	1	September	100	0
April	100	0	October	99	1
May	100	0	November	94	6
June	100	0	December	85	15

Source: USAF Air Weather Service (MATS), Climatic Center, Asheville, N.C.

2.1.4 Drainage

The most pronounced characteristics of the County's drainage pattern is the westerly flow of storm and snow melt runoff from the Sierra Nevada and adjacent foothills across the valley floor. As the major rivers and streams of the County reach the valley floor, they fan out into a "braided" stream pattern which dissipates westward in numerous intertwined channels separated by islands and/or channel bars. The occurrence of braided stream patterns is generally an indication of stream inability to carry hydrological loads. In Tulare County, this condition results from large volume flows in main stream channels experiencing a sudden decrease in stream elevation gradient, with a resultant loss of transporting power, as the channels emerge from the Sierra foothills onto the valley floor. The most significant effect of this condition is the greater susceptibility of the valley lowlands to flooding potential than is true in the more mountainous portions of the County.

Predictably, the valley portion of Tulare County has historically been subjected to periodic inundation from stream and irrigation channel overflows. The most recent severe flooding resulting in substantial urbanized portions of the County being inundated occurred in 1955, prior to the construction of Terminus (1962) and Success (1961) Dams, on the Kaweah and Tule Rivers, respectively. Other recent incidents of significant flooding on the valley floor, although less extensive than the 1955 occurrence, took place in January 1963, December 1966, January/February 1969 and February 1978.

Tulare County urban development patterns have not historically encroached into stream channels or significantly into flood plains, although a number of small unincorporated areas have been periodically inundated. For this reason, and the fact that the majority of Tulare County's major aviation facilities are located near urban areas, few existing airports in the County have been flooded or seriously threatened. During the 1969 flood, a portion of the Woodlake Airport

was flooded as a result of a break in a small drainage ditch. The Alta Airport was touched by high water. Eckert Field, in the Lindsay-Strathmore area, has also been threatened but never actually inundated by major floods. Of interest, however, is the occurrence of subsurface runway damage which was sustained at the Visalia Municipal Airport during the 1969 flood period as a result of weakening drainage channels beneath the runway.

During the past decade, since the preparation of the 1971 County-wide airport master plan, the County has completed a comprehensive flood plain management study and implemented flood plain zoning controls where appropriate. Moreover, a number of flood control improvement projects have been undertaken or are being planned which further ensure that potential flooding threats to the County's urban areas and aviation-related facilities are reduced to the fullest reasonable extent. Accordingly, although intensive rainfalls and peak storm periods will inevitably generate conditions of localized ponding and short runoff at most of the County's airports and fields, the exposure of most of these facilities to the more substantial flood hazard of generalized inundation and resultant damage is now regarded to be minimal.

2.1.5 Population

Population characteristics are important in preparing forecasts of future aviation activity and levels of facilities demand. Demographic projections of urban and rural growth help determine the anticipated locational aspects of future demand for aviation related facilities. The frequency distribution of specific population characteristics is also a useful indicator of various aviation-related demands.

Table 2-2 reflects population totals for Tulare County as a whole, for the incorporated cities of the County, and for unincorporated area, and illustrates the historic growth trends for each of these political subdivisions over the past several decades.

From the data presented in the following table, several noteworthy trends can be identified. In 1970, approximately 42.8 percent of the total County population resided within the corporate limits of the eight cities in Tulare County. By 1980, however, this total had risen to 50.6 percent, and by 1984, to 52.2 percent.

TABLE 2-2
Population Totals - Tulare County and Cities
1960-1984

Unit Designation	Population 1960	1970[1]	1980[2]	1984[3]
Unincorporated Area	112,410	107,792	121,503	128,786
Cities:				
Dinuba	6,103	7,917	9,907	10,587
Exeter	4,264	4,475	5,619	6,079
Farmersville	Unincorporated	3,456	5,544	6,012
Lindsay	5,397	5,206	6,924	7,504
Porterville	7,991	12,602	19,707	23,271
Tulare	13,824	16,602	22,475	25,383
Visalia	15,791	27,268	49,729	56,993
Woodlake	2,623	3,371	4,343	4,708
Subtotal - Cities	55,993	80,530	124,248	140,537
Total County	168,403	188,322	245,751	269,323

Sources: 1 1970 Census of Population
2 1980 Census of Population
3 1984 State Dept. of Finance Estimate

This pattern of growth occurring principally within the already urbanized areas of the County bears out an assumption made to that effect in the 1971 Plan.

Over the same ten-year period, 1970 to 1980, Visalia was by far the fastest growing community in the County, and one of the fastest in the State, increasing in population by 82.4 percent. Farmersville (58.1 percent), Porterville (54.6 percent) and Tulare (49.4 percent) also increased in population at a rate substantially faster than that of the balance of the County. Of the remaining cities, Lindsay (33.0 percent) grew at a rate only slightly above that of the County as a whole from 1970 to 1980, while Woodlake (28.8 percent), Dinuba (24.3 percent) and Exeter (23.5 percent) grew at rates slightly below the County-wide average.

TABLE 2-3
COMPARISON OF TULARE COUNTY POPULATION
TO FOUR-COUNTY AND STATE POPULATION TOTALS
1960 - 1990

Unit Designation	Population 1960	1970	1980
Tulare County	168,403	188,322	245,751
Four-County (Tulare Fresno, Kings, and Kern Area)	876,286	998,602	1,237,591
State of California	15,863,000	20,026,000	23,668,562
Tulare County Population as a Percentage of Four-County Area Population	19.22%	18.86%	19.86%
Tulare County Population as a percentage of State Population	1.06%	0.94%	1.04%
Four-County Area Population as a Percentage of State Population	5.52%	4.99%	5.23%

Table 2-3 presents data comparing County population totals on a historical basis to totals both for the four-county air trade area discussed in the 1971 Plan and for the State as a whole.

From the data depicted in the foregoing table, it can be concluded that: (a) Since 1970, Tulare County has grown at a more rapid rate (30.5 percent) than both the State as a whole (18.2 percent) or the four-county area (22.9 percent) over the same period; and (b) the County has a larger proportion of the State's total population than in 1970, contradicting a projection in the 1971 Airport Master Plan to the effect that the County's share of overall State population would steadily decline.

Few documented projections of future County population growth have been made in recent years; Tulare County Building and Planning Department staff have indicated that, in general, projections provided periodically by the California State Department of Finance have been acceptable for planning purposes. For perspective, Table 2-4, below, presents the State's 1983 figures for the County, along with projections from several other sources.

TABLE 2-4
SUMMARY OF COMPARATIVE POPULATION PROJECTIONS
TULARE COUNTY

1980 - 2000

Source	Population					
	1960	1970	1980	1985	1990	2000
U. S. Census of Population	168,403	188,?22	245,751	--	--	--
State Dept. of Finance (1983)	NA	NA	NA	278,673	308,557	362,206
Co. Staff (1981)	NA	NA	NA	278,100	309,900	384,900

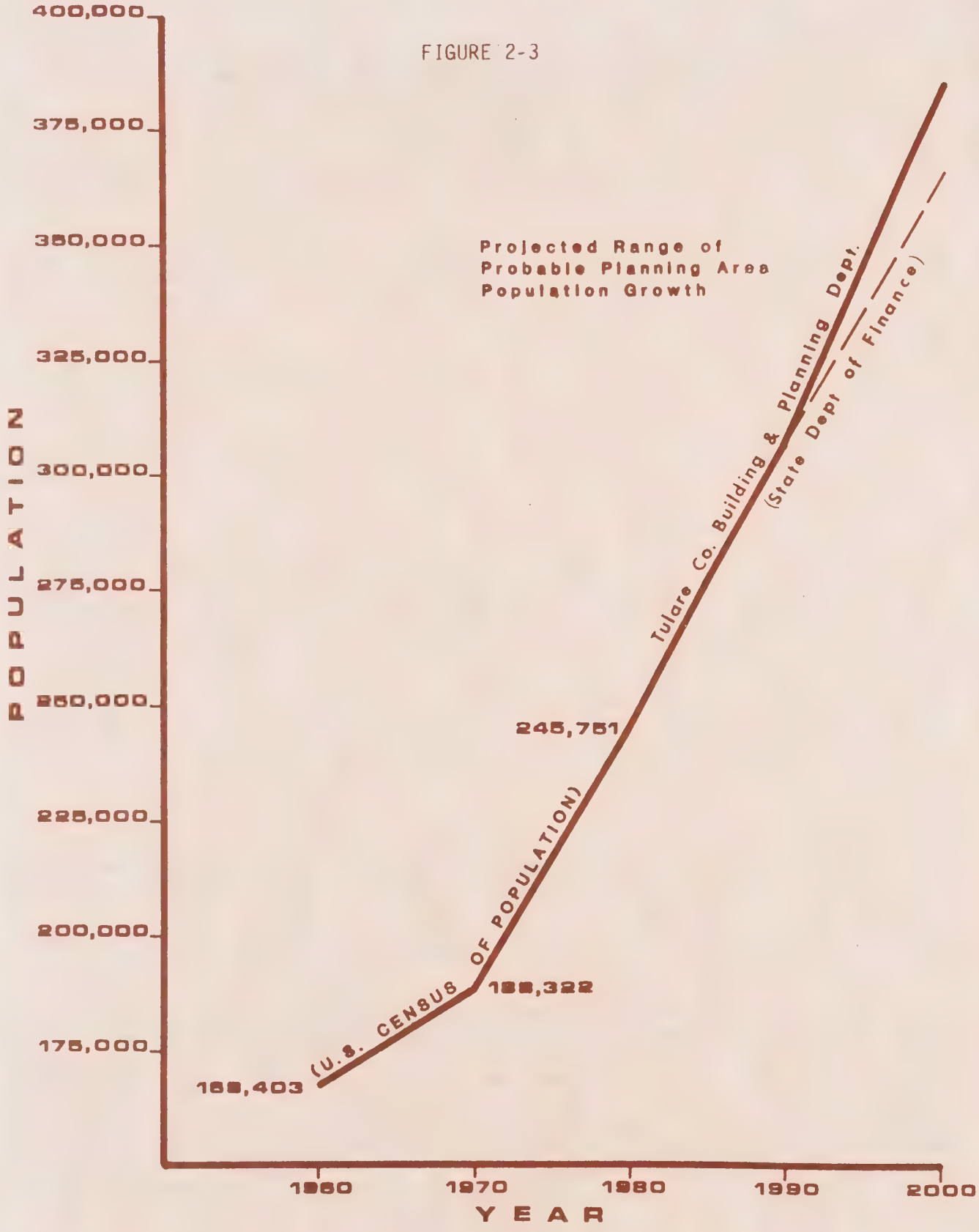
The projections summarized in the foregoing table are graphically depicted in Figure 2-3, on the following page. For the purposes of this study it is assumed that Tulare County will continue to experience population growth at a rate higher than that of the State as a whole and probably slightly higher than the State Department of Finance's E-150 series projections. This assumption is based upon the combination of recent trends and historical data concerning the County's growth rate, the relative stability of the County's overall economic base in comparison to that of other portions of the State and the slightly higher birth rate typically associated with agriculturally-oriented areas such as Tulare County in comparison with the more urban portions of California.

2.1.6 Economy

Economic characteristics of the study area are important in the development of forecasts of specific aviation activities, particularly to the extent that such characteristics influence the predictability of probable aircraft ownership within the area. Other factors, such as regional income distribution, are also significant determinants of the air carrier enplanements.

Tulare County's economy continues to be dominated by agriculture and agriculturally-related activities. In 1979, approximately 28.1 percent of all jobs in the County were in the agricultural industrial sector, and the County produced over $1.2 billion dollars worth of agricultural crops. Thirty-nine separate agricultural products generated gross income in excess of $1.2 million in 1979, led by grapes ($247 million), oranges ($192 million, milk ($170 million), cotton ($147 million) and cattle/calves ($115 million). On the average, acknowledging seasonal fluctuations in the County's total agricultural work force, 25,850 persons were employed in agribusiness throughout 1979.

FIGURE 2-3



PLANNING AREA
POPULATION PROJECTIONS

Nonagricultural employment in Tulare County stood at an average of 66,400 jobs through 1979. The nonagricultural industrial sector of the County's economy continues to expand, employing nearly seventy-two percent of all salary and wage earners in the County in 1979, compared to about sixty percent a decade ago. Table 2-5 presents a proportionate categorization of all employment County-wide for 1979, in comparison to similar data for 1969.

TABLE 2-5
PERCENTAGE DISTRIBUTION OF EMPLOYMENT
TULARE COUNTY
1969 AND 1979

Employment Category	Percent of County Employment 1969	1979	Rank 1969	1979
Agriculture	37.3%	28.1%	1	1
Government	14.6%	19.1%	3	2
Trade	16.4%	18.4%	2	3
Manufacturing	7.6%	12.8%	5	4
Services	11.0%	10.9%	4	5
Construction	2.3%	4.3%	7	6
Transportation/ Utilities	3.9%	4.1%	6	7
Finance, Insurance and Real Estate	1.7%	2.4%	8	8
Mining	0.1%	0.0%	9	--

Source: Annual Planning Information, Tulare County Labor Market Area, 1980-81. State of California, Employment Development Department, May, 1980.

As illustrated by the foregoing table, agricultural employment represents a decreasing share of the overall County employment picture. Conversely, both government and manufacturing employment have increased substantially as proportions of the local employment market over the past decade.

Retail sales per capita in Tulare County in 1983 averaged about $3,748, which is below the State average per capita of $4,503. In 1979, the most recent year for which actual income data is available for the County, the median family income was $16,172, compared to the statewide average of $21,537. Similarly, median household income for the County lagged below the State average, $14,153 compared to $18,243.

Table 2-6 summarizes the distribution of household income by level on a county-wide basis for 1979.

TABLE 2-6
DISTRIBUTION OF HOUSEHOLD INCOME BY PERCENT
OF HOUSEHOLDS IN EACH INCOME CATEGORY
TULARE COUNTY
1979

Annual Income Level	Percent of Total County Households
Less than $2,499	3.8%
$2,500 to $4,999	9.6%
$5,000 to $7,499	10.1%
$7,500 to $9,999	10.9%
$10,000 to $14,999	18.3%
$15,000 to $24,999	25.2%
$25,000 or more	22.1%

Source: 1980 U. S. Census STF 3A

In general, the census data indicate that overall countywide income levels have increased, even discounting for inflation, over the decade since preparation of the 1971 Plan.

This shift upwards has been attributable to increases in non-agricultural employment, as well as to the overall County-wide growth sustained between 1970 and 1980, creating higher levels of demand for products and services provided locally. At the same time, however, inflation in the cost of basic household goods, as well as a substantial increase in the regional costs of housing itself over the past four to five years, has had the effect of eroding this gain in income and resultant effective buying power.

2.1.7. Surface Transportation

In spite of spiraling prices for gasoline being absorbed by the consumer, the private automobile remains and will likely continue as the most important transportation mode in Tulare County. Accordingly, the most significant regional transportation issues confronted for the foreseeable future will be focused on maintenance and, to a limited extent, enhancement of the existing major road network. The importance of this orientation is underscored by the substantial dependency of the regional agri-economic base on truck freight capability. State Route 99 remains one of the most regionally significant transportation facilities in the San Joaquin Valley. Similarly, State Highway Routes 198, the major east-west roadway through Tulare County, and 63 and 65, primary north-south routes, handle substantial, regionally vital traffic volumes.

The existing State Highway system in Tulare County was completed in the 1950's and 1960's. The 1970's and early 1980's have seen few improvements made, or proposed, by the State. Several incremental improvements are now in the planning and programming stages, but the long lead times involved mean a 5 to 10 year delay before actual construction occurs.

With regard to county roads, emphasis has shifted since the 1971 Plan from capital construction of improvements to the existing road network to maintenance of the basic circulation system due to funding reductions. Current funding levels are not adequate to maintain recommended maintenance schedules, and a limited number of construction projects is viewed as essential each year.

Seven of the eight incorporated cities in Tulare County also emphasize maintenance of their existing road systems. The one exception is the City of Visalia, which must make major improvements over the next twenty years to accommodate anticipated growth.

Increased passenger transit service has also become a priority in the County and several of its cities in recent years. The County of Tulare operates four distinct types of service: the common carrier subsidy program, the rural routes, the local demand/response (dial-a-ride) system, and the contracts with all eight cities for service in the unincorporated fringe areas around each city. The City of Visalia has recently implemented a scheduled fixed-route system for intracity travel; each of the eight cities has also established demand/response transit systems within corporate limits. Inter- and/or intrastate bus service is provided to County residents by three carriers: Orange Belt Stages, Greyhound and Continental Trailways.

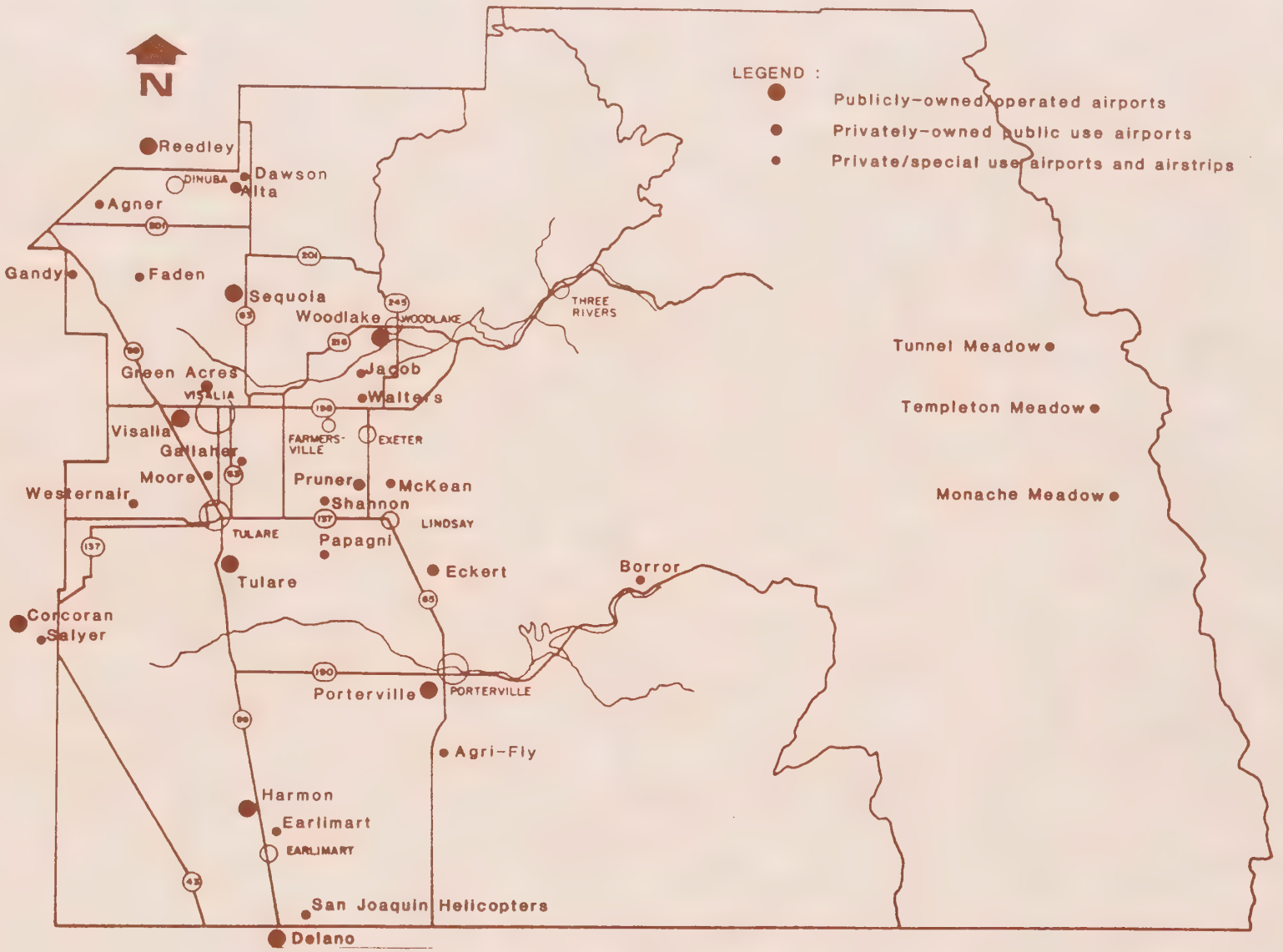
Two major railways, Santa Fe and Southern Pacific, provide major freight service in support of both agriculture and industry in Tulare County. Passenger rail service, via AMTRAK, is available at terminal points in both Hanford and Fresno, to the west and north of the County, respectively. The effect of the proposed merger of the two railroads on local service is unknown at this time.

2.2 AERONAUTICAL ENVIRONMENT

An understanding of the existing aeronautical environment is prerequisite to the study of the airport system in Tulare County. This section of the report presents the findings of recent field investigations and literature reviews designed to update the December, 1969 airport inventory and the pilot survey included in the 1971 Airport Master Plan as well as the other basic characteristics of the aeronautical environment. For purposes of this study, the aeronautical environment will be defined as the existing airport system in the region, consisting of the facilities and services which are located within the County's boundaries, as well as those regionally significant airports adjacent to the County.

Figure 2-4 generally illustrates the distribution of the airport facilities located in and adjacent to Tulare County.

FIGURE 2-4



EXISTING AIRPORT FACILITIES LOCATED
IN AND ADJACENT TO TULARE COUNTY

2.2.1. Airport Inventory

Since the boundaries of Tulare County do not restrict aviation activity, yet serve to delineate the primary limits of airports examined in this study, the airport inventory is presented in four separate sections. The first three sections deal with those public and private airports located within the County boundaries, regardless of location or size. Some of these airports receive more attention than others due to their size and significance to aviation in the County. The fourth portion of the inventory includes airports located adjacent to the County which are of regional significance either because of their location or activity level.

Public Airports - At this time there are five public airports in Tulare County, aside from the U.S. Forest Service facilities in the Sequoia National Forest. Although several privately-owned airports in the County are open for public use as well, the following five facilities comprise the "public" component of the local airport system:

1) Visalia Municipal Airport
2) Porterville Municipal Airport
3) Mefford Field
4) Sequoia Field
5) Harmon Field

In the 1981 TCAG-adopted Plan, the Woodlake Airport, although privately owned, was listed as a public airport because it was leased to the City of Woodlake at that time. Ownership of the airport has subsequently been transferred to owners who are operating it as a private, public-use facility with no municipal involvement.

The Three Rivers Airport was previously identified as a public airport; however, in 1981 the State Department of Aeronautics revoked its permit for the operation of the Three Rivers Airport facility on the basis of safety factors. Subsequently, the County demolished the runway and permanently closed this facility.

Following is a profile of each of the five airports containing basic information concerning location, facilities, usage and other characteristics associated with these airports. All inventory information is based on the reports of either airport managers or the airport inventory maintained by the Department of Aeronautics.

AIRPORT NAME: Visalia Municipal Airport

1. Location and Service Area:

   Visalia Municipal Airport is located 5 miles west of the city at Latitude 36° 19', Longitude 119° 23'. The airport lies at an elevation of 295 feet, serving the City of Visalia, Tulare County and portions of Kings County with commuter airline, as well as general aviation services.

2. Ownership:

   The City of Visalia owns and operates the airport.

3. Administration:

The City of Visalia's Department of Municipal Services operates and maintains the airport.

4. Facilities:

A. Airport Classification: General Transport.

B. Number and Orientation of Runways: NW-SE (30-12) 6,559' x 150' asphalt surface.

C. Lighting: MIRL; Rotating Beacon, Clear/Green 36: DE.

D. Navaids: VOR from VSA OMNI located 4.7 nautical miles to the West-Northwest. Segmented circle and lighted wind cone. Instrument Landing System for Runway 30.

E. AV/GAS: 80/87, 100/'30 Octanes dispersed at gas island and by 2 trucks. Also, Jet A Fuel.

F. Structures: Air carrier and general aviation terminal buildings; 92 small aircraft hangar spaces (161,000 sq. ft.) in 13 hangars.

G. Acreage: 628.

H. Access: The Airport is located adjacent to the intersection of State Routes 99 and 198. Both are significant roadways serving Visalia, as well as adjacent communities.

I. General Conditions/Miscellaneous: The runway and facilities are generally in excellent condition. A crash/fire/rescue station is located on-site providing 24-hour coverage. A CFR Walter's Truck carries 500 gallons of water, 110 gallons of AFFF Foam, and a 250-pound Purple K dry chemical system. A CFR II Oshkosh Truck carries 1,595 gallons of water and 205 gallons of AFFF Foam. Additionally, coverage is provided by a Pierce pumper carrying 500 gallons of water and equipped with a 50-foot Tele Squirt and by a Van Pelt minipumper carrying 275 gallons of water.

5. Usage:

A. Annual Operations: 132,000.

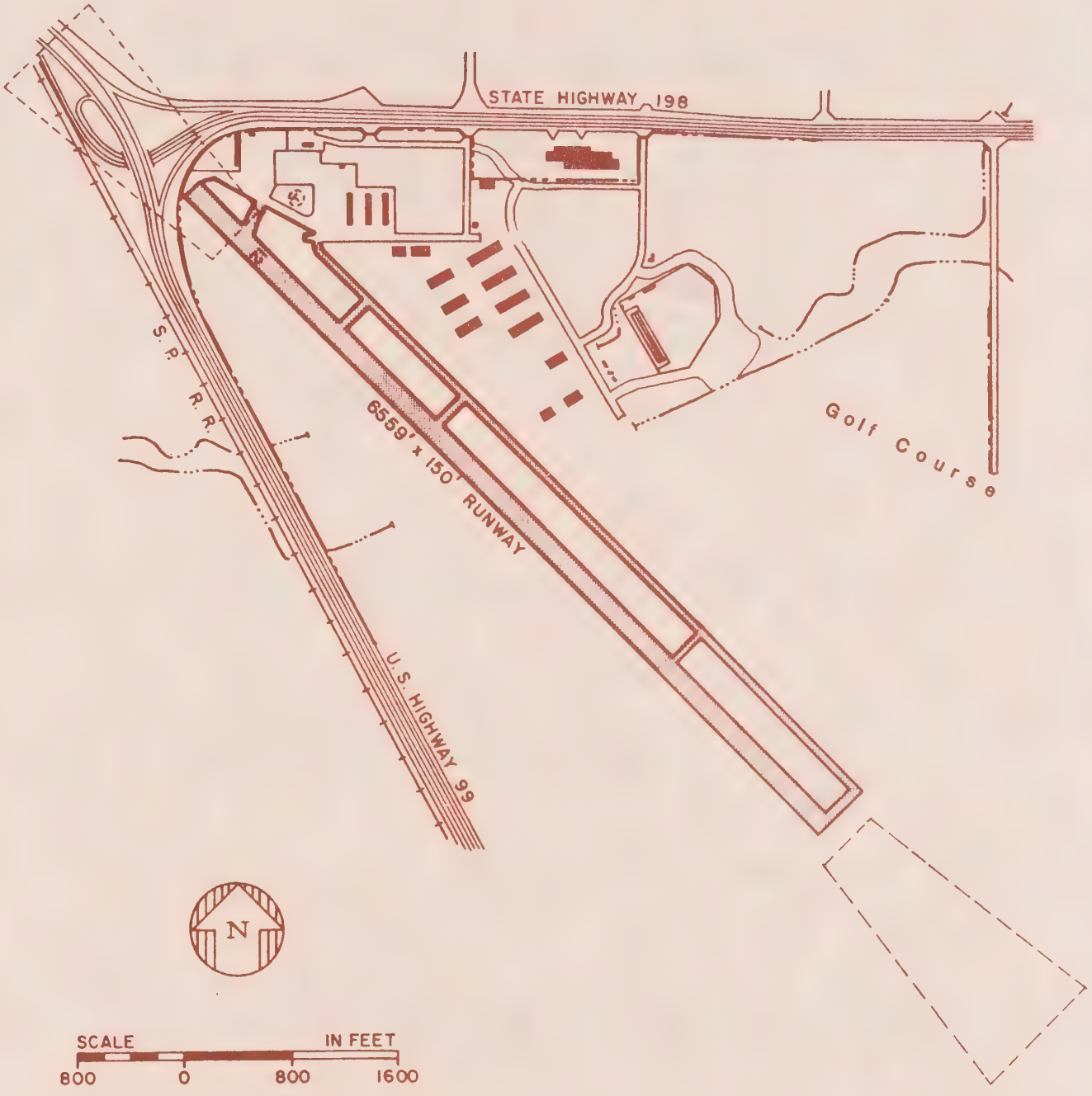
Commuter air carrier service. Passenger enplanements of 20,000 in 1979.

B. Fixed Base Operations: 5 FBO's engaged in instruction, charter services and corporate transport.

C. Based Aircraft:

Single Engine:	140
Multi-Engine :	40
Rotary Wing :	1
Total :	181

FIGURE 2-5



SITE LAYOUT AND FACILITIES INVENTORY
Visalia Municipal Airport

6. Environmental/Planning Considerations:

A. Adjacent Land Use:

Adjacent land uses include agriculture, commercial and recreation. The Plaza Park recreational area is located next to the airport, on City property. It includes rodeo grounds, an 18-hole golf course, tennis courts, three softball fields, a horseback riding and hiking trail, a fishing pond and picnic areas. Plans are currently under preparation for expansion of this facility.

No public institutions or other sensitive land uses are located near the immediate environs of the airport, except for residential and school uses in the unincorporated community of Goshen, which lies approximately 12,000 feet from the threshold of runway 12 in the departure zone.

Existing land uses in the area are in general conformance with the Tulare County General Plan, the City's land use plan and FAR Part 77.

B. Land Use Controls:

City of Visalia General Plan and zoning ordinance, Tulare County General Plan and zoning ordinance, Goshen Community Plan and FAR Part 77.

C. Community Interest:

The Visalia Municipal Airport is an important community asset and services as a primary transportation terminal. An updated master plan for future development and expansion of the airport was prepared in 1980.

AIRPORT NAME: Porterville Municipal Airport

1. Location and Service Area:

The Porterville Municipal Airport is located three miles southwest of the City at Latitude 36° 01', and Longitude 119° 03'. The airport lies at an elevation of 443 feet serving the City of Porterville and the southeastern portion of Tulare County.

2. Ownership:

The City of Porterville owns the airport.

3. Administration:

The City has contracted with a private airport concessionaire to provide operations and management services.

4. Facilities:

A. Airport Classification: General Utility

B. Number and Orientation of Runways: NW-SE (30-12), 6000' x 150' asphalt surface (a 4,000' x 150' abandoned asphalt runway also exists on the south side with two intermediate connector taxiways).

C. Lighting: MIRL; Rotating Beacon, Clear/Green 24" DE.

D. Navaids: VOR approach from PTV VORTAC located seven miles south. Also, Visual Approach Slope Indicator (VASI).

E. AV/GAS: 80/87, 100/130 Octanes dispensed by truck.

F. Structures: General aviation terminal complex which includes a restaurant, airport manager's office, operations counter, and rest rooms. Twenty-seven (27) hangar spaces.

G. Acreage: 850.

H. Access:

A two-lane paved road exists to the site from Newcomb Street which connects to Scranton Avenue and Tea Pot Dome Avenue. Convenient connections exist to State Routes 65 and 190.

I. General Conditions/Miscellaneous:

A number of physical improvements have been made since 1973, including the resurfacing of the main 6,000 foot runway and surfacing of the adjacent taxiway.

5. Usage:

A. Annual Operations: 80,000.

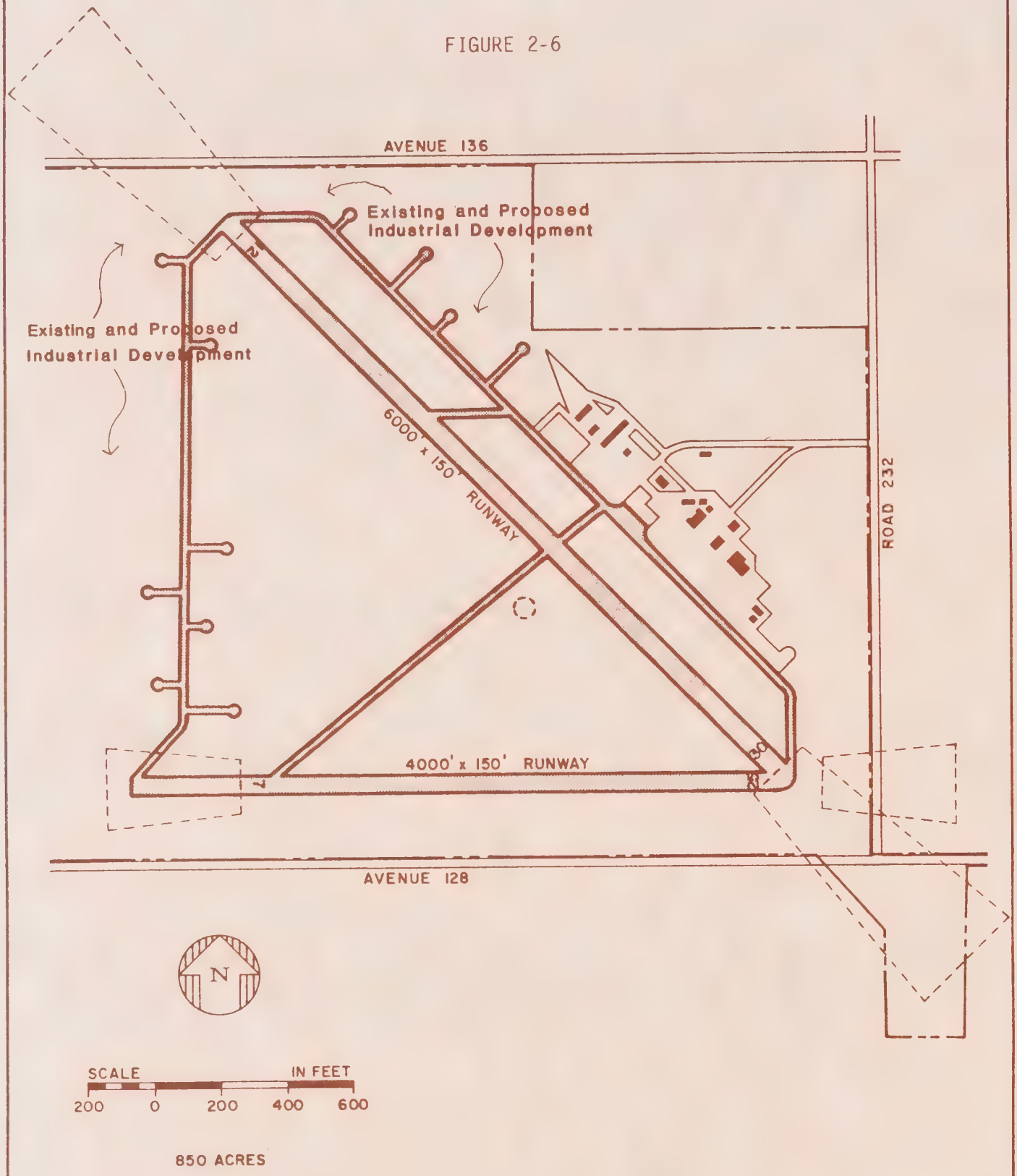
B. Fixed Base Operations:

2 flight schools and aircraft charters, 2 agricultural applicators, 1 aircraft maintenance operator, 1 helicopter repair and parts service operator, the U.S. Forest Service fire suppression operation.

C. Based Aircraft:

Single Engine:	55
Multi-Engine :	10
Rotary Wing :	27
Total :	92

FIGURE 2-6



SITE LAYOUT AND FACILITIES INVENTORY
Porterville Municipal Airport

6. Environmental/Planning Considerations

A. Adjacent Land Use:

The City of Porterville has continued to encourage the development of the airport as an industrial air park. Aside from the light industrial use just east of Newcomb Street and an adjacent dwelling unit, the land surrounding the airport is agricultural. Field crops, citrus fruit trees and vacant land predominate.

B. Land Use Controls:

City of Porterville General Plan and zoning ordinance, Tulare County general plan and zoning ordinance. The City has designated an Airport Development Zone, in accordance with FAR Part 77.

C. Community Interest:

The City Council has had a continuing interest in developing the airport for the last several years and has implemented significant capital improvements recommended by the 1973 Master Plan.

AIRPORT NAME: Mefford Field (Tulare Municipal Airport)

1. Location and Service Area:

The Tulare Municipal Airport is located four miles southwest of the City of Tulare at Latitude 36° 09', and Longitude 119° 19'. The airport lies at an elevation of 272 feet and serves the City of Tulare and the west-central portion of Tulare County.

2. Ownership:

The City of Tulare owns Mefford Field. The City purchased the last portion of the airport property from the County of Tulare on June 15, 1971.

3. Administration:

The City of Tulare manages the airport.

4. Facilities:

A. Airport Classification: Basic Utility, Stage 1.

B. Number and Orientation of Runways: NW-SE (31-13), 3310' x 75' asphalt surfaced.

C. Lighting: LIRL.

D. Navaids: VOR Runway from Visalia VOR 14.5 miles north.

E. AV/GAS: 80/97, 100/130 octanes.

F. Structures: 9 hangar buildings, offices.

G. Acreage: 300

H. Access: Adjacent access to State Route 99 via Avenue 200.

I. General Conditions/Miscellaneous:

The airport is generally in good condition.

5. Usage:

A. Annual Operations: 49,000

B. Fixed Base Operations: 2 aircraft maintenance facilities, 1 flying school, 1 radio repair shop, 2 aircraft sales and rental operations.

C. Based Aircraft:

Single-Engine:	57
Multi-Engine :	5
Rotary Wing :	1
Total :	63

6. Environmental/Planning Considerations

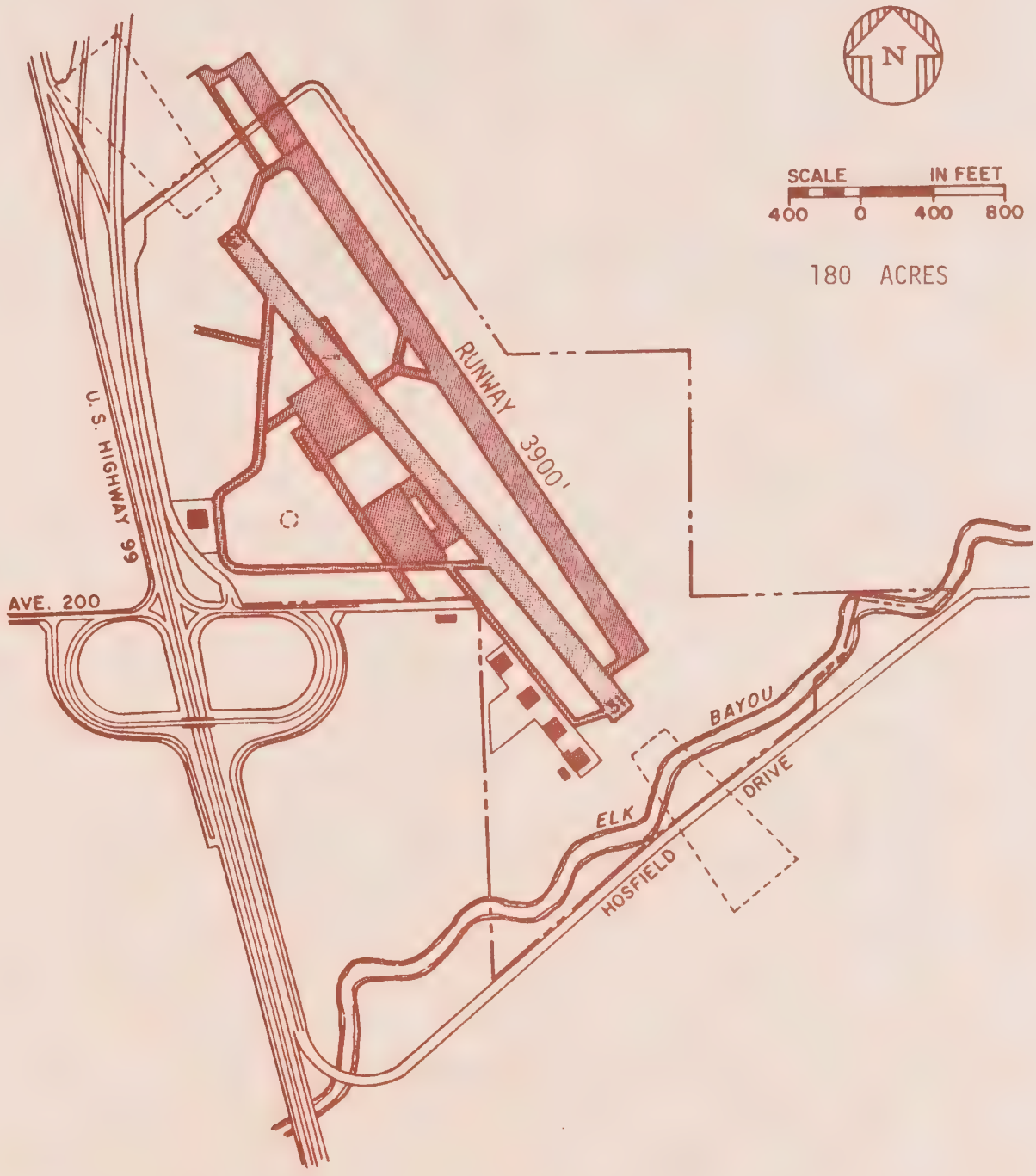
A. Adjacent Land Use:

The adopted Master Plan provides for the expansion of the runway to an ultimate length of 3,900 feet and space for taxiways, aprons and hangars, to support anticipated growth.

The land located immediately east of the airport is utilized by the Tulare Country Club and includes a golf course. The Elk Bayou Park is located south of the airport. Commercial uses border the north and west sides of the airport along State Route 99.

The combination of the adjacent highway and land uses noted earlier provide secure boundaries for the existing airport site. A row of 50-foot eucalyptus trees exists along the highway right-of-way just west of the airport site. Also, an overpass crosses State Route 99 less than a quarter of a mile from the airport's main parking apron, with an off-ramp generally bordering the apron.

FIGURE 2-7



MEFFORD FIELD

B. Land Use Controls:

The primary land use control affecting the airport site is the Airport Hazard Zoning Ordinance developed specifically for the Tulare Airport as a part of the adopted Tulare Airport Master Plan. This ordinance controls land use and physical development through the imposition of building height limitations and clear zones. The other important land use control is the land use element of the Tulare County General Plan. The ordinance and Plan are consistent with one another concerning land use in the region.

C. Community Interest:

The community has shown interest in the facility, as evidenced by increases in based aircraft over the last ten years. There is substantial continued interest locally in the development of extensive agribusiness commercial and industrial facilities at the airport.

AIRPORT NAME: Sequoia Field

1. Location and Service Area

Sequoia Field is located 8 miles north of Visalia at Latitude 36° 26', Longitude 119° 19'. The airport lies at an elevation of 313 feet and principally serves both Visalia and the northern portion of Tulare County.

2. Ownership:

Sequoia Field is owned and operated by Tulare County.

3. Administration:

The airport is managed by the Tulare County Building Services Department, overseeing a concessionaire who provides on-site operational and management services.

4. Facilities:

A. Airport Classification: Basic Utility, Stage 1.

B. Number and Orientation of Runways: NW-SE (31-13), 3,020' x 60' asphalt surface.

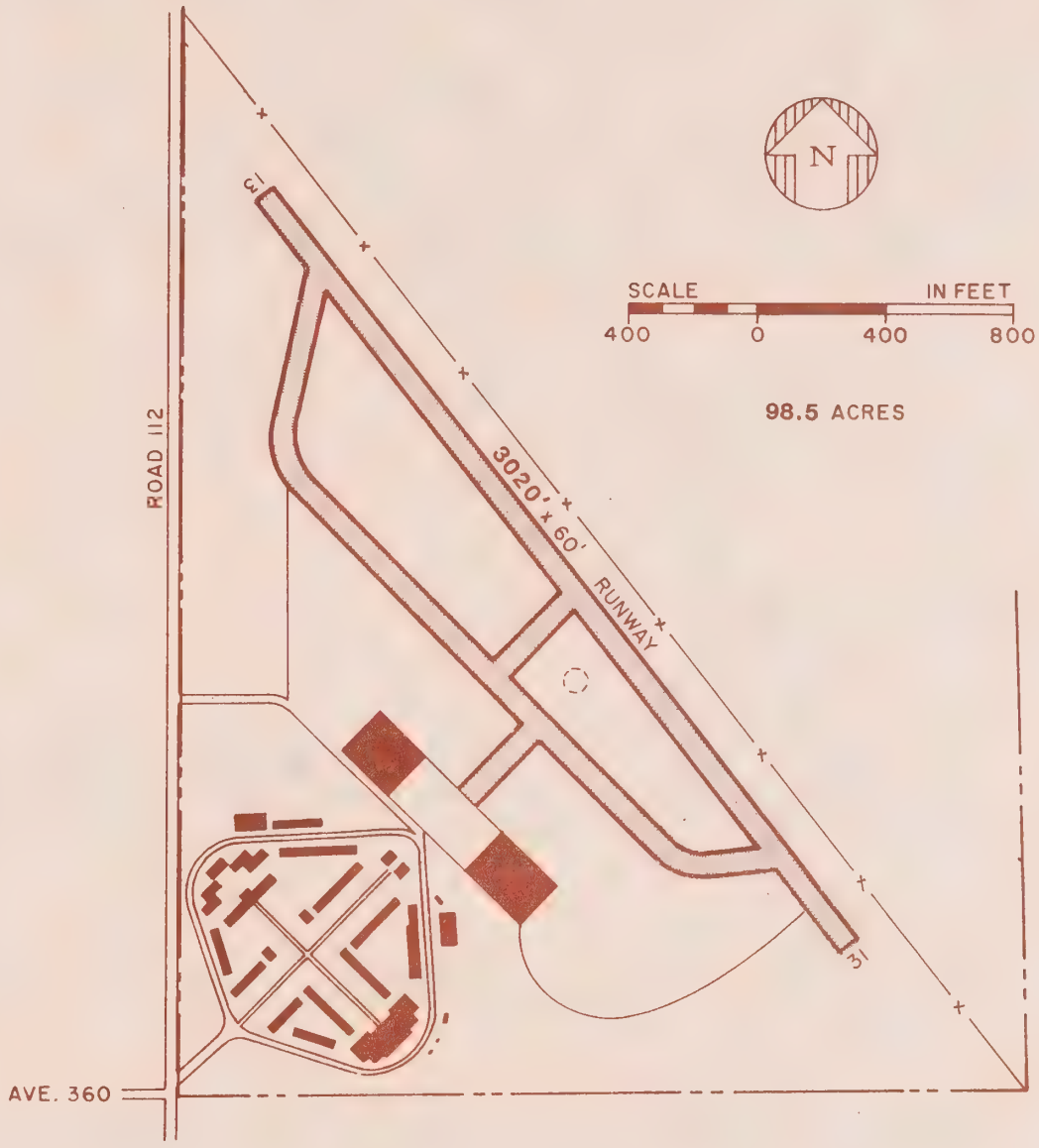
C. Lighting: MIRL

D. Navaids: None

E. AV/GAS: 100/300 (12,000 Gal.) octane.

F. Structures: 2 conventional hangars utilized by the FBO's, one portaport and miscellaneous buildings at the adjoining County correctional center.

FIGURE 2-8



SITE LAYOUT AND FACILITIES INVENTORY
Sequoia Field

G. Acreage: 124.86

H. Access: Road 112 and Avenue 360.

I. General Condition/Miscellaneous: Runway surface repairs and improvements were made in 1978 and 1979.

5. Usage:

A. Annual Operations: 35,000

B. Fixed Base Operations: U.S. Forestry Service fire suppression operations, 1 aerial applicator, aircraft dealer, parts and supplies, tire retread service.

C. Based Aircraft:

Single Engine:	24
Multi-Engine :	7
Rotary Wing :	5
Total :	36

6. Environmental/Planning Considerations

A. Adjacent Land Use:

Surrounding land use consists of agricultural and vacant land. The Tulare County Correctional Center is located on the airport site. An expanded correctional center development is being planned north of the airport on a portion of the County-owned site.

B. Land Use Controls:

Tulare County general plan and zoning ordinance.

C. Community Interest:

Community interest, inasmuch as this airport is located away from any substantial population center, is nominal.

AIRPORT NAME: Harmon Field (Pixley Airport)

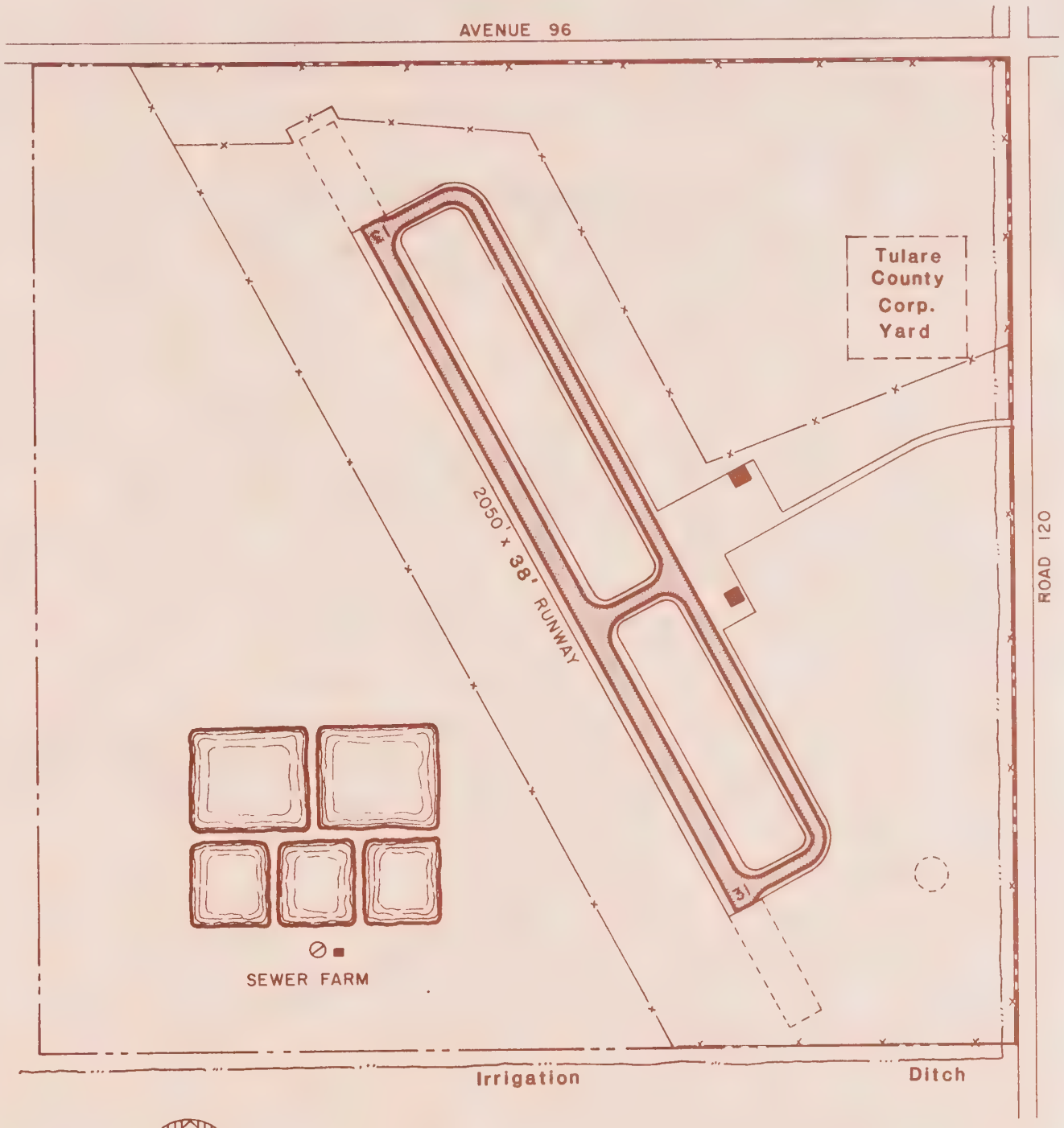
1. Location and Service Area:

Harmon Field is located 1 mile southwest of Pixley at Latitude 35° 57', Longitude 119° 18'. The airport lies at an elevation of 256 feet and serves the community of Pixley and the southwestern portions of the County.

2. Ownership:

Tulare County owns Harmon Field.

FIGURE 2-9



SITE LAYOUT AND FACILITIES INVENTORY
Harmon Field(Pixley Airport)

3. Administration:

The airport is managed by the Tulare County Building Services Department, overseeing a concessionaire who provides on-site operational and management services.

4. Facilities:

A. Airport Classification: Basic Utility, Stage 1

B. Number and Orientation of Runways: NW-SE (31-13), 2,050' x 38' asphalt surface.

C. Lighting: MIRL (Manual).

D. Navaids: None.

E. AV/GAS: 80/87 (12,000 Gal.), 100/130 (9,000 Gal.) octanes dispensed at gas pit for emergencies only.

F. Structures: 1 conventional hangar, 1 portable office.

G. Acreage: 104

H. Access: Paved access road to Road 120.

I. General Condition/Miscellaneous:

Recent improvements and changes include the purchase of clear zone area, removal of adjacent power poles, addition of corporation yard, and sale of 57 acres to Pixley Public Utility District.

5. Usage:

A. Annual Operations: 10,000.

B. Fixed Base Operations: 2 aerial applicators.

C. Based Aircraft:

Single Engine	9
Multi-Engine	0
Rotary Wing	0
Total	9

6. Environmental/Planning Considerations:

A. Adjacent Land Use:

Surrounding land use consists of field crops, pasture and vacant land. In 1951, the Pixley Public Utility District constructed a sewage treatment plant near Runway 13-31.

B. Land Use Control:

Tulare County general plan and zoning ordinance

C. Community Interest:

Community interest in the airport appears to be substantial.

Private Airports Open to Public Use - Five private airports are particularly significant in the Tulare County airport system, inasmuch as they are open to public general aviation activity and, therefore, satisfy a portion of the aviation demand countywide. These airports are listed below and described in more detail in the following section of this chapter.

1) Alta Airport
2) Eckert Field
3) Green Acres
4) Pruner Airport
5) Woodlake Airport

In addition to the airports listed above, there are a number of other small, private airstrips scattered throughout the County which also comprise an element of the Countywide airport system. These airstrips and fields, typically not available for public general aviation use are, nonetheless, worthy of some discussion. The more significant of these facilities will be discussed later in the next section of the report.

AIRPORT NAME: Alta Airport

1. Location and Service Area:

Alta Airport is located four miles east of Dinuba, at Latitude 36° 32', Longitude 119° 18'. The airport lies at an elevation of 364 feet and serves the Dinuba area and the northeastern portion of the County.

2. Ownership:

Alta Airport is privately owned.

3. Administration:

The airport is privately managed and maintained, but open for public use.

4. Facilities:

A. Airport Classification: Basic Utility, Stage 1

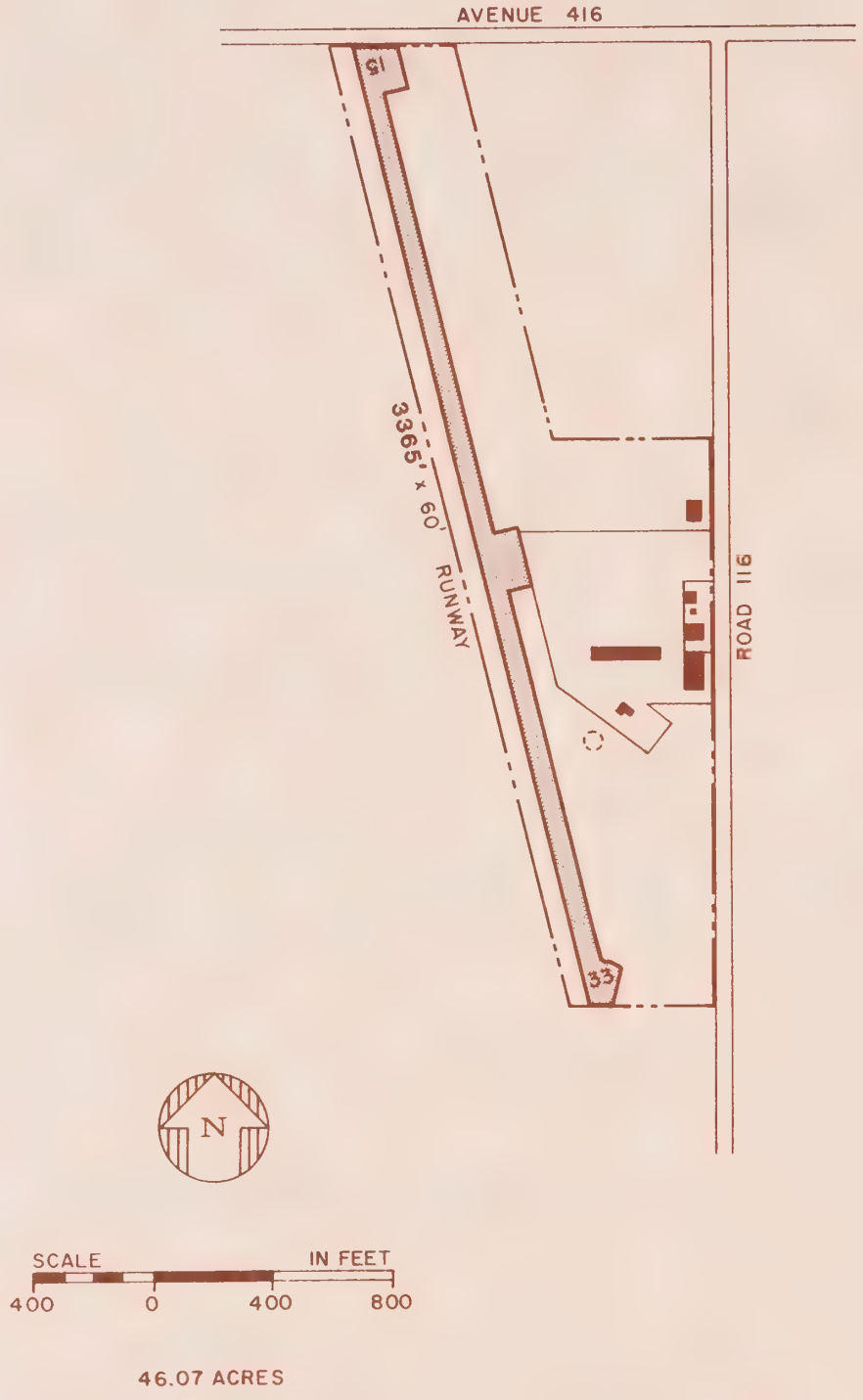
B. Number and Orientation of Runways: NW-SE (33-15) 3,365' x 60' asphalt surface.

C. Lighting: MIRL.

D. Navaids: None.

E. AV/GAS: 100/130 (8,000 Gal.) octanes dispersed at gas pit.

FIGURE 2-10



SITE LAYOUT AND FACILITIES INVENTORY
Alta Airport

F. Structures: 4 conventional hangars, 1 shelter, 9 portable tee hangars, 1 portable office building.

G. Acreage: 46.

H. Access: Road 116.

I. General Conditions/Miscellaneous:

Although no agricultural products are transported from the airport, corporate executives utilize the facility as access to a large packing house nearby and other agriculturally-related holdings in northern Tulare County.

5. Usage:

A. Annual Operations: 15,000.

B. Fixed Base Operations: 1 aerial applicator.

C. Based Aircraft:

Single Engine:	20
Multi-Engine :	2
Rotary Wing :	0
Total :	22

6. Environmental/Planning Considerations:

A. Adjacent Land Use:

Alta Airport is surrounded by diverse agricultural land uses on a number of small farms in the area. Individual dwellings are mixed with small sections of citrus groves, vineyards and row crops.

The approach to runway 15 is blocked by high utility poles and an 8-foot wooden barrier separating the end of the runway and heavily-used Avenue 416.

B. Land Use Controls:

Tulare County general plan and zoning ordinance.

C. Community Interest:

There is nominal interest on the part of the community of Dinuba regarding this airport.

AIRPORT NAME: Eckert Field

1. Location and Service Area:

Eckert Field is located 1.5 miles northeast of the unincorporated community of Strathmore, at Latitude 36° 09', Longitude 119° 02'. The airport lies at an elevation of 426 feet serving the central foothill region and the community of Strathmore.

2. Ownership:

Eckert Field is privately owned.

3. Administration:

Eckert Field is privately managed and maintained, but open for public use.

4. Facilities:

A. Airport Classification: Basic Utility, Stage 1

B. Number and Orientation of Runways: NW-SE (31-13), 1,760' x 225' asphalt surface.

C. Lighting: Beacon (on request).

D. Navaids: None.

E. AV/GAS: 100/130 (10,000 Gal.) octane.

F. Structures: 6 enclosed tee hangars, 14 open tee hangars, 2 conventional hangars, 1 dwelling unit, 1 shop.

G. Acreage: 29

H. Access: Avenue 204

I. General Condition/Miscellaneous:

The airport is in excellent condition.

5. Usage:

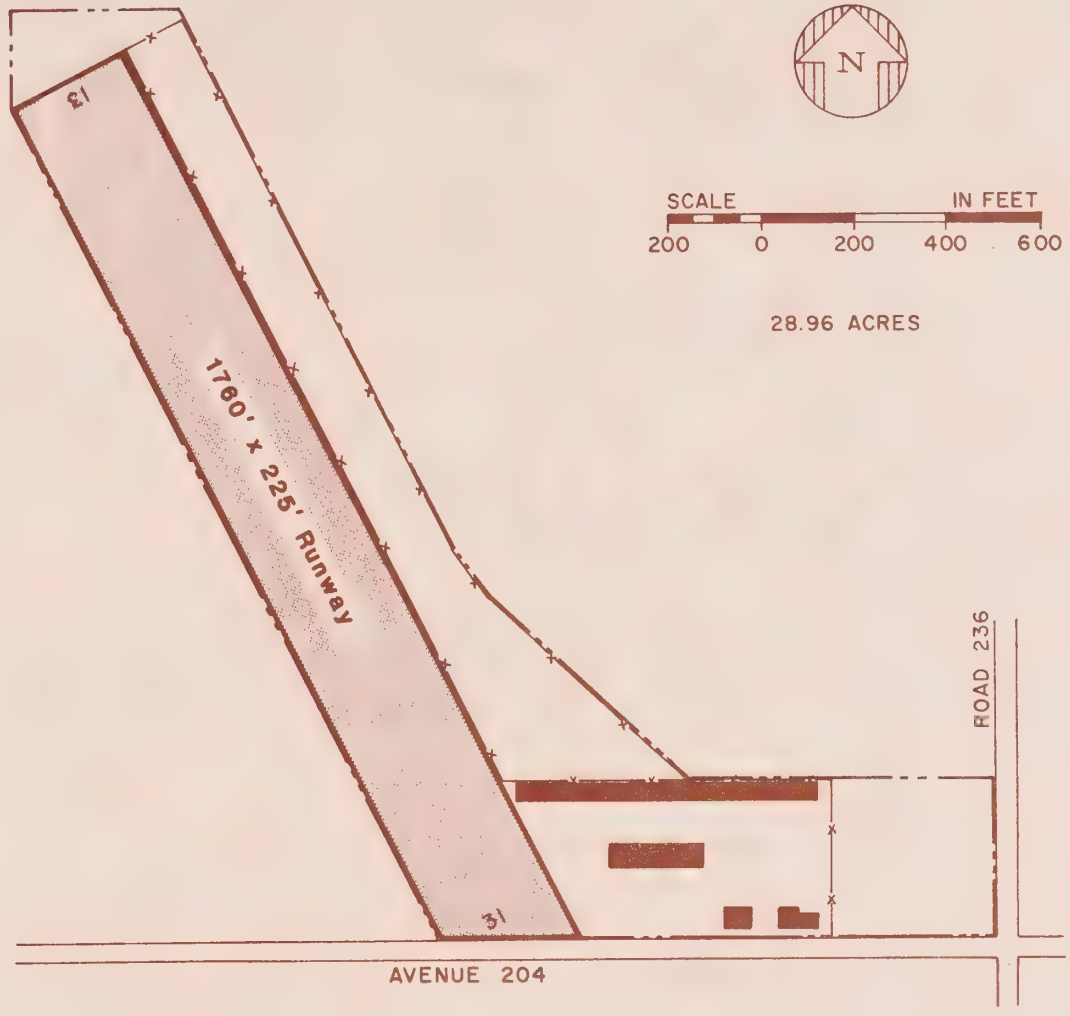
A. Annual Operations: 10,000

B. Fixed Base Operations: None

C. Based Aircraft:

Single Engine:	22
Multi-Engine :	1
Rotary Wing :	0
Total :	23

FIGURE 2-11



SITE LAYOUT AND FACILITIES INVENTORY
Eckert Field

6. Environmental/Planning Considerations:

A. Adjacent Land Use:

Eckert Field is bordered on all sides by mature, productive citrus groves, with the exception of the airport's southern boundary, which abuts Avenue 204. With the exception of a small overrun at the end of runway 31, the 20-foot orange trees that run to the end of the existing runway effectively limit the usable length, assuming a standard 20:1 glide slope and displaced threshold demarcation.

B. Land Use Controls:

Tulare County general plan and zoning ordinance.

C. Community Interest:

Expressed interest in Eckert Field from any specific community is nominal.

AIRPORT NAME: Green Acres

1. Location and Service Area:

The Green Acres Airport is located on the edge of the Visalia urban area, just outside the northwestern limits of the incorporated area of the city at Latitude 36° 20', Longitude 119° 19'. The airport lies at an elevation of 317 feet and serves the Visalia area.

2. Ownership:

Green Acres Airport is privately owned.

3. Administration:

The airport is privately managed and maintained, but open to public use.

4. Facilities:

A. Airport Classification: Basic Utility, Stage 1

B. Number and Orientation of Runways: NW-SE (30-12) 2800' asphalt surface.

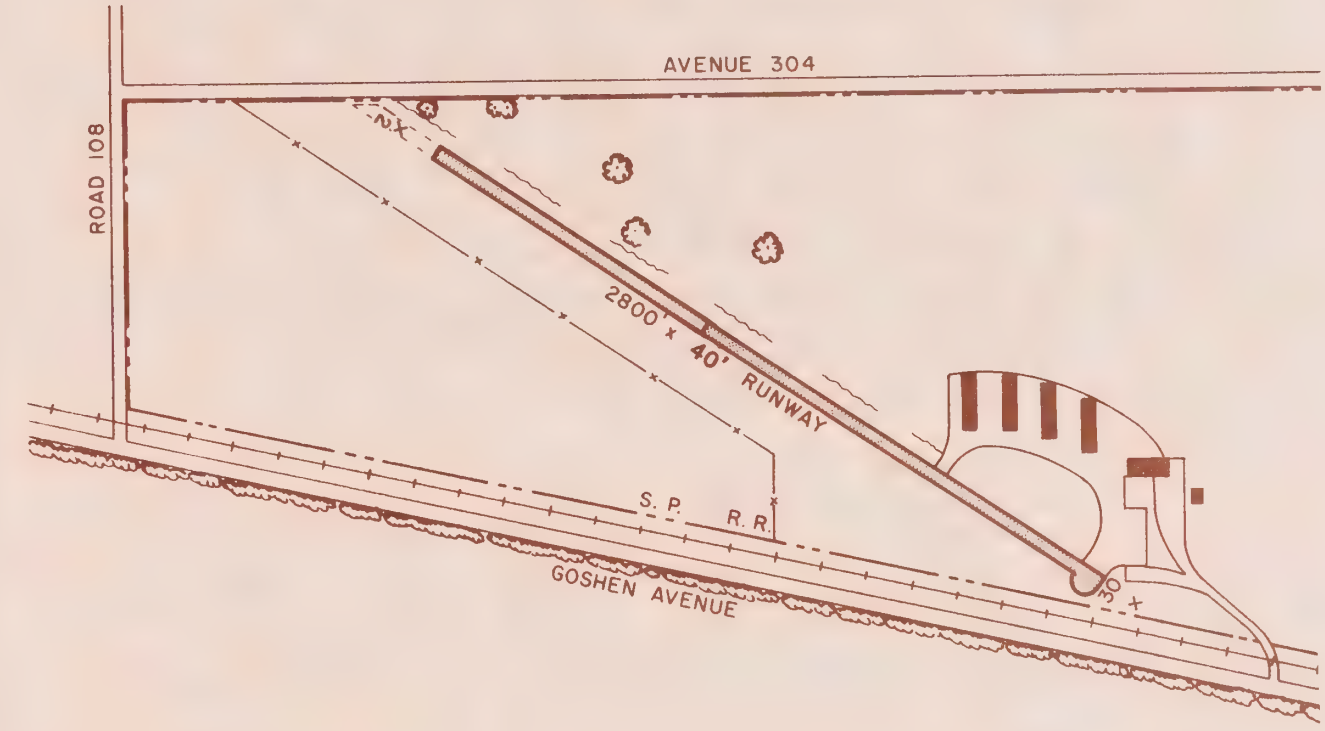
C. Lighting: Obstruction lights, lighted wind cone.

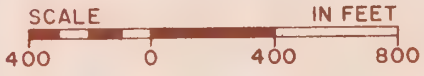
D. Navaids: None.

E. AV/GAS: 100/130 (10,000 Gal.) octanes dispensed at gas pit.

F. Structures: 4 tee hangars, airport office complex, 1 dwelling unit.

FIGURE 2-12





80.0 ACRES

SITE LAYOUT AND FACILITIES INVENTORY
Green Acres

G. Acreage: 80

H. Access: Goshen Avenue

I. General Conditions/Miscellaneous:

The airport is conveniently located adjacent to the City of Visalia.

5. Usage:

A. Annual Operations: 20,000.

B. Fixed base Operations: 1 aerial applicator, flight instructions provided.

C. Based Aircraft:

Single Engine:	44
Multi-Engine :	1
Rotary Wing :	0
Total :	45

6. Environmental/Planning Considerations:

A. Adjacent Land Use:

Green Acres Airport is located on the northwestern edge of the Visalia urban area, just outside the City of Visalia's incorporated limits. It is immediately surrounded by agricultural land uses on its northern, eastern, and western boundaries. A golf course (the Visalia Country Club) exists as a small buffer between the airport's southern boundary, formed by Goshen Avenue and a Southern Pacific Railroad right-of-way, and medium density residential land uses.

Agricultural uses of surrounding land include cotton allotments, livestock and an orchard to the north.

Approaches to Runway 30 are blocked by a long row of eucalyptus trees (topped at 20 feet), that border the golf course property line on the southern side of Goshen Avenue. Utility power lines exist at the airport's northern boundary along Houston Avenue.

Green Acres School is located less than a mile to the east of the airport, near the intersection of Houston Avenue and Mooney Boulevard.

There has been a long history of variable levels of conflict between the airport and the nearby sensitive land uses.

B. Land Use Control:

City of Visalia general plan and zoning ordinance and Tulare County general plan and zoning ordinance.

C. Community Interest:

Substantial community interest is generated by local aviation enthusiasts, as well as a significant number of transient aviators. Some agricultural aviation use also generates interest in this airport. The City of Visalia has periodically addressed concerns regarding the Green Acres Airport's relationship to the Municipal Airport and to the surrounding land uses. An amendment to the Visalia General Plan is under consideration at the time of adoption of this document to convert the airport site to residential development. This proposal would involve closure of the airport and possible relocation to another site in the unincorporated area, the location of which is unknown at this time.

AIRPORT NAME: Pruner Airport

1. Location and Service Area:

Pruner Airport is located three miles southwest of Exeter, at Latitude 36° 14', Longitude 119° 08'. The airport lies at an elevation of 320 feet and serves the community of Exeter and surrounding agricultural areas.

2. Ownership:

Pruner Airport is privately owned.

3. Administration:

The airport is privately managed and maintained, but is open to public use.

4. Facilities:

A. Airport Classification: Basic Utility, Stage 1

B. Number and Orientation of Runways: NW-SE (31-13) 2250' x 45' asphalt surface.

C. Lighting: None.

D. Navaids: None.

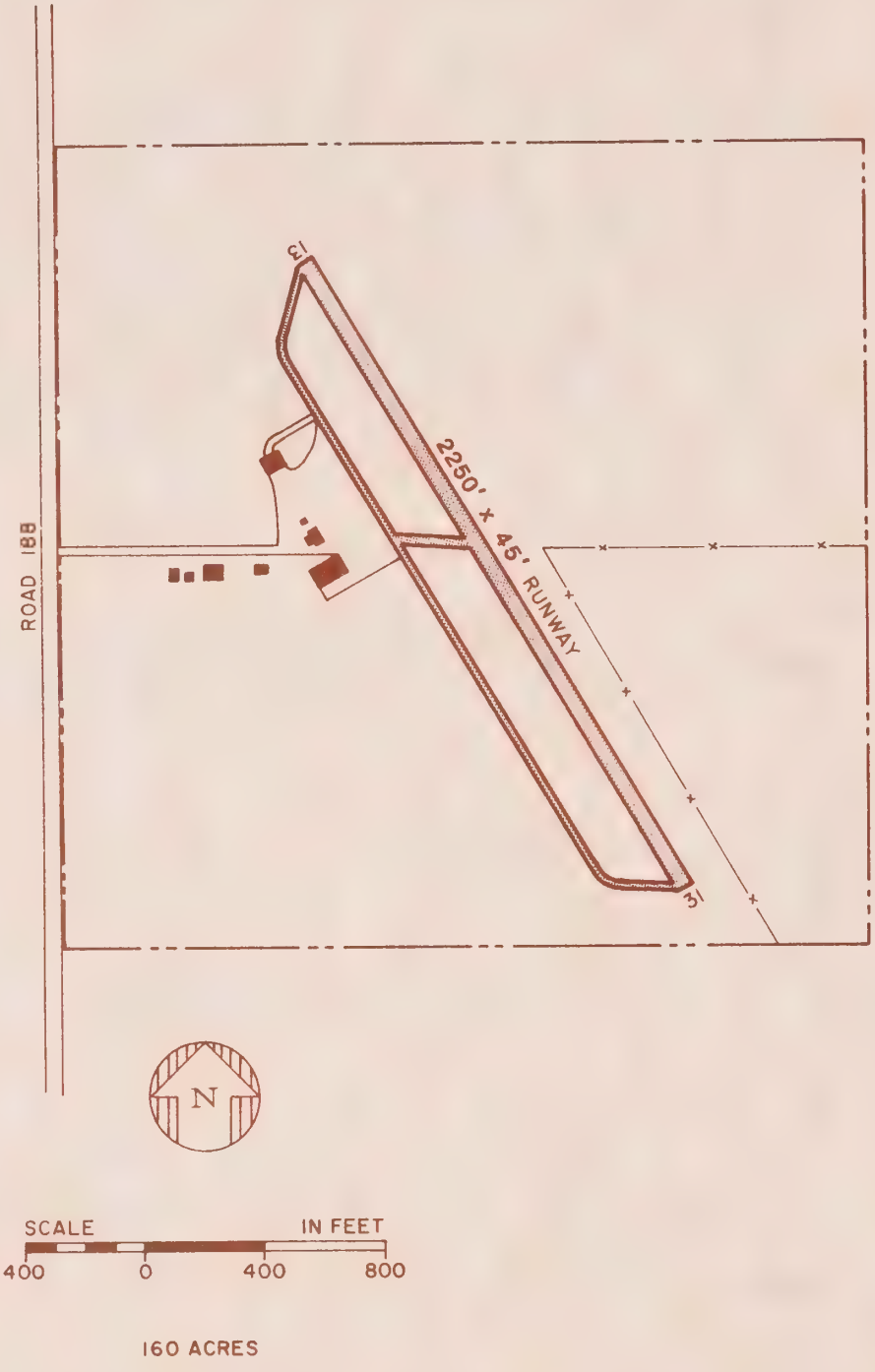
E. AV/GAS: 80/87 octane dispensed at gas pit in emergencies only.

F. Structures: 2 conventional hangars, 1 dwelling unit, miscellaneous structures.

G. Acreage: 160.

H. Access: Dirt road to Road 118.

FIGURE 2-13



SITE LAYOUT AND FACILITIES INVENTORY
Pruner Airport

I. General Condition/Miscellaneous:

The general condition of the airport is deteriorating, with a number of repairs necessary to the runway, adjacent structures, and the private access road.

5. Usage:

A. Annual Operations: 6,000.

B. Fixed Base Operations: 1 aerial applicator, 1 rotary craft repair business.

C. Based Aircraft:

Single Engine	5
Multi-Engine	1
Rotary Wing	1
Total	7

6. Environmental/Planning Considerations:

A. Adjacent Land Use:

Pruner Airport is surrounded by agricultural, vineyard and pasture lands. Much of the adjacent land is owned by the airport owner.

B. Land Use Control:

Tulare County general plan and zoning ordinance.

C. Community Interest:

There is only nominal community interest in Pruner Airport from any specific community at this time.

AIRPORT NAME: Woodlake Airport

1. Location and Service Area:

Woodlake Municipal Airport is located two miles south of the City of Woodlake at Latitude 36° 23', Longitude 119° 06'. The airport lies at an elevation of 425 feet and serves the City of Woodlake and smaller unincorporated communities in eastern Tulare County.

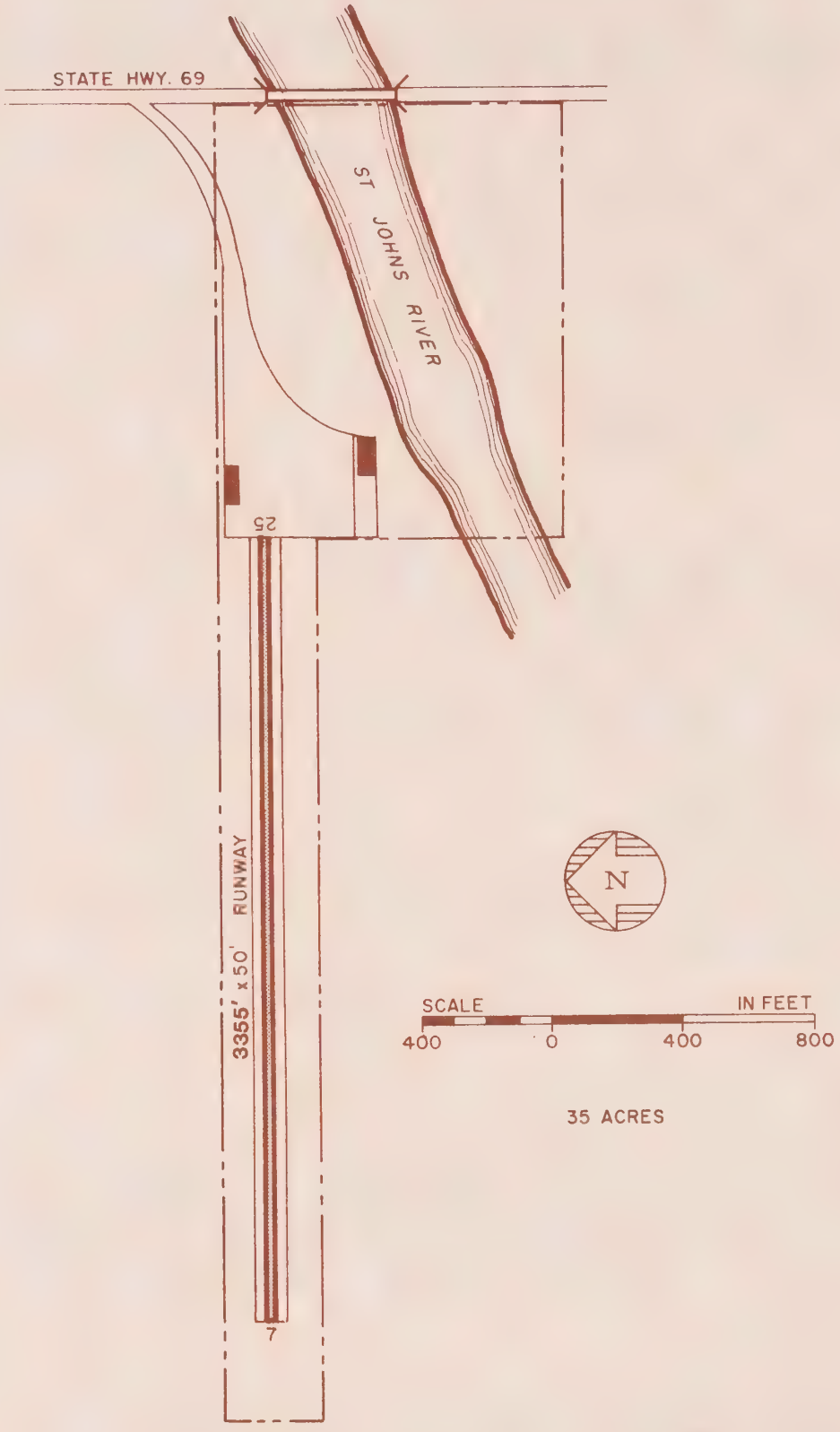
2. Ownership:

The airport is privately owned.

3. Administration:

The airport is privately managed and maintained, but open for public use.

FIGURE 2-14



SITE LAYOUT AND FACILITIES INVENTORY
Woodlake Municipal Airport

4. Facilities:

A. Airport Classification: Basic Utility, Stage 1

B. Number and Orientation of Runways: E-W (7-25) 3,355' x 50' asphalt surface.

C. Lighting: MIRL.

D. Navaids: None.

E. AV/GAS: 80/87 (2,000 Gal.), 100/130 octanes.

F. Structures: 1 tee hangar, 8 portable hangars, 1 office, 1 restaurant.

G. Acreage: 32.

H. Access: State Route 245 connecting with State Route 216 one mile north and State Route 198 five miles south.

I. General Conditions/Miscellaneous:

The airport is in generally good condition. The facility is located adjacent to the foothills and is often clear when other valley airports are fogged in.

5. Usage:

A. Annual Operations: 22,000

B. Fixed Base Operations: 3 flying clubs, flight instructions.

C. Based Aircraft:

Single Engine:	29
Multi-Engine :	2
Rotary Wing :	0
Total :	31

6. Environmental/Planning Considerations

A. Adjacent Land Use:

Much of the surrounding land consists of agricultural or vacant uses, with the exception of a portion of the eastern approach which is zoned for residential agricultural uses. The Woodlake municipal sewage treatment plant lies just north of the site.

The airport is bounded on its southern edge by the St. Johns River, with only a levee and a small buffer of vacant bottomland separating the latter from the runway. Valencia Boulevard crosses the St. Johns River via a narrow two-lane bridge, which is located within the clear zone.

Riverside Avenue, which parallels the St. Johns River directly east of the airport, is bordered by low-intensity residential land use. A row of thirty-foot power lines parallels half of the northern boundary.

B. Land Use Controls:

Tulare County general plan and zoning ordinance and FAR Part 77.

C. Community Interest:

There has traditionally been active interest on the part of the community in the development and maintenance of the airport.

Privately-Owned, Special Use Airports - In addition to the publicly-owned and privately-owned, public-use airports discussed in the preceding section, field investigations and interviews were conducted to determine the locations and status of the large number of privately-owned, special-use airfields and landing strips in the County. The extensive demand for agricultural aerial application, as well as ranching and recreational aircraft operations in rural and mountainous areas, have given impetus to the establishment and continued use of many such fields and strips throughout the County. The California State Department of Aeronautics and Tulare County are responsible for permitting and monitoring the aviation activities at these facilities.

The nature of the airfields and landing strips included in this category results in continuing turnover in their use and distribution throughout the County. Several such airports identified in the 1971 Plan have either been closed or have become insignificant in terms of operations activity, due to their location and/or other factors. This section of the inventory provides a brief description of some of the small airfields in the County, those which can be characterized as permanent, based on the duration and continuity of their use. Information concerning these airports was obtained from the 1971 Plan, field investigations, and discussions with local aviators familiar with small airports in Tulare County.

1. Agner Strip

This is an unimproved landing strip adjacent to Avenue 408, near the Kings River. It is privately owned and has one based aircraft.

2. Agri-Fly

This is an aerial application operation utilizing a short NW-SE landing strip located two miles southeast of Terra Bella. The operator uses one helicopter for this activity, which is based at the field.

3. Borror Airstrip

Borror Airstrip is a partial turf and asphalt surface, north-south runway along Balch Park Road near Springville. A lumber mill is located adjacent to the northern end of the runway. Vacant land surrounds the majority of this privately-owned airstrip, which is occasionally used by aerial applicators.

4. Dawson Airstrip

This strip is a privately-owned heliport near Orosi, with one based helicopter.

5. Earlimart Airstrip

Earlimart Dusters own and operate this field for their aerial application activities. The field has five based aircraft which move between this facility and Harmon Field, where Earlimart Dusters are also active.

6. Gallaher Field

Gallaher Field is located about 3.5 miles northeast of the City of Tulare, and consists of a 2,550' x 20' asphalt runway. It is not used at the present time.

7. Gandy Airstrip

The Gandy Airstrip is located in the extreme northwestern corner of the County and consists of an asphalt-surfaced runway with a gas pit. Two aircraft are based there and used during the dusting season for aerial application.

8. Jacob Airstrip

Jacob airstrip is privately owned and located in the Venice Hill area. It consists of a 1,029' x 60' runway in a north-south direction.

9. Moore Airstrip

This is a 1,760' x 34' oil-and-dirt strip located a quarter mile east of State Route 99, three miles north of the City of Tulare. It is used primarily for aerial application activity and has five based aircraft.

10. U.S. Forestry Service Strips

The U.S. Forest Service owns and operates landing strips for forestry operation activity located at remote, high altitude meadows. It should be noted that any airstrips located in the Sequoia National Forest have been removed from all U.S.F.S. maps and are used for emergencies only.

11. McKean Airstrip

McKean is an agricultural field southeast of Exeter with a 3,360' x 30' decomposed granite runway.

12. Westernair

Located approximately five miles wests of Tulare, this field is used by an aerial applicator.

13. San Joaquin Helicopters

This heliport is located northeast of Delano, just north of the Kern County line.

A number of other airstrips and landing fields are distributed throughout the County, but are of such limited use that their description is not appropriate in this report.

Regionally Significant Airports - Several airports in the region surrounding Tulare County affect the aeronautical environment in the study area and, therefore, are included as a part of this inventory. These airports are:

1) Lemoore Naval Air Station
2) Fresno Air Terminal
3) Chandler Field
4) Meadows Field
5) Delano Airport
6) Hanford Municipal Airport

Following is a brief review of the status of each of these facilities and comments concerning their relationship to aviation activity in Tulare County.

1. Lemoore Naval Air Station

The Lemoore Naval Air Station is a major United States military installation located in central Kings County and serves as the Master Training Center for carrier-based squadrons of the U.S. Pacific Fleet. Over the last decade, military activity has decreased somewhat, with approximately 5,000 military and civilian personnel, excluding dependents, located there.

Since Lemoore is a very large economic activity center, as well as an important naval air station, it generates significant commercial air travel demand. Most of this demand is serviced by the Fresno Air Terminal.

The primary aircraft based at Lemoore include the King-Temco-Vought A-7 Consair II subsonic attack aircraft and a new squadron of McDonnell Douglas FA-18 attack aircraft. Lemoore is capable of handling an additional 15,000 personnel, and its airspace remains well below saturation.

The air station is also home of the Federal Aviation Administration Route Air Traffic Control Center (RATCC), which includes sophisticated air surveillance capability. This facility provides air traffic control for the Visalia Municipal Airport and other airports in the region.

2. Fresno Air Terminal

The Fresno Terminal remains the most significant civilian airport in the region with over 268,000[1] total aircraft operations in fiscal year 1979, 234 based aircraft [2] and significant airside and landside facilities, including an FAA operated traffic control tower. The airport includes 3 runways, the longest of which is 9,218 feet, instrumented and capable of accommodating a majority of the civil and military aircraft fleet.

All levels of major airframe, engine, and avionics maintenance are available at the Air Terminal. A total of seven fixed based operators are located at the Fresno Air Terminal providing charter, instruction, patrol and aerial photography services. The Federal Aviation Administration maintains a General Aviation District Office and Flight Service Station which provides flight planning and weather services to Tulare County.

In addition, a regular U.S. Air Force F-106 Interceptor Dispersal Group and an Air National Guard F-102 Squadron operate from the airport. Air carrier and freight services are provided by both trunk and third level air carriers. Also a full range of general aviation services, including major maintenance and repair capabilities are available.

3. Chandler Field

Located just two miles west of the Fresno Central Business District, Chandler Field remains an important general aviation facility for the region. Chandler Field had a total of nearly 76,000 operations[3] during fiscal year 1979. Much of the general aviation activity located at the field is itinerant.

Airport services includes instruction, charter, sales, aerial application services, major airframe, engine and avionics maintenance, and a restaurant. Two parallel runways of 3,441 and 3,475 by 75 feet are located at the field.

---

1. FAS Air Traffic Activity, Fiscal year 1979, FAS. September 30, 1979. pg. 19.

2 National Airport System Plan, Revised Statistics 1980-1989, FAS. 1980. pg. 61.

3. Ibid

4. Meadows Field

This facility is located four miles northwest of Bakersfield in Kern County and serves the Bakersfield urban area and the County with air carrier and general aviation services. In fiscal year 1979, Meadows Field handled over 175,000 total operations[1], and current estimates indicate that there are 221 based aircraft[2] located there. A Federal Aviation Administration control tower and Flight Service Station monitor operations at the field.

Fixed based operations include charter, instruction, aerial application, aircraft sales, service, and major airframe, engine and avionics repair. Full ILS approach capabilities are offered at the field which includes two asphalted runways of 5,700 and 3,800 feet. A popular air motel and restaurant are also located at the airport.

5. Delano Airport

This airport is located two miles southeast of the City of Delano, just south of the Tulare and Kern County border. The City of Delano owns the airport, which consists of a lighted, 6,000 foot asphalt surfaced runway. A large trailer park to the north and a housing development to the southwest constrain its use somewhat. The airport has a 2,000 foot displaced threshold at the northwest end which reduces its usable length to 4,000 feet for Runway 14 landings.

Services offered at the airport include charter, patrol, flight training, agricultural aerial application, major maintenance, and aircraft sales and service.

6. Hanford Municipal Airport

The Hanford Municipal Airport is located one mile southeast of the City of Hanford in Kings County. It remains Kings County's primary civilian airport offering charter, flight instructions, air taxi and agricultural services as well as major repairs. A considerable amount of flight instruction takes place at the airport, due in part to the close proximity of Lemoore Naval Air Station, whose personnel are eligible to utilize Veterans Administration flight training courses offered at Hanford.

Services offered include charter, instruction, and aerial application. A 3,400 foot asphalted runway is provided, which includes runway lights. The airport is located 13 miles west of Visalia Municipal Airport.

---

1. Ibid

2. National Airport System Plan Revised Statistics 1980-1989, FAS. 1980 pg. 61.

2.2.2 Airspace and Navigation

In general, airspace and navigation problems remain minimal in Tulare County and do not present any severe constraints to the development of the airport system. Terminal radar for a portion of the County is provided at the Fresno Air Terminal for traffic control in the Fresno Area. Handoffs are made from the Oakland or Los Angeles Control Centers to terminal area control. while VFR traffic advisories are handled through Fresno.

The Fresno Air Terminal remains the traffic control enter for the northern section of Tulare County and Visalia Municipal Airport, while traffic control for the southern County area is provided by Meadows Field. Starting in 1975, the FAA conducted air traffic surveys to determine the necessity for an FAA operated traffic control tower at Visalia Municipal Airport. The surveys revealed that there is a need for the tower facility, and FAA has included such a facility in its long-term construction program.

With two exceptions, the airspace over the valley floor in Tulare County is initially controlled commencing at an altitude of 1,200 feet. The noted exceptions are the airport traffic areas surrounding the Visalia Municipal Airport and Porterville Municipal Airport, which are controlled from an elevation of 700 feet above ground level. When the ceiling or visibility in the airport traffic does not meet VFR minimums (i.e., one mile visibility and 1,000' ceiling), the airport traffic area becomes a control zone and the airspace is controlled from the ground up. Most of the airspace in the mountainous areas of the County remains uncontrolled.

The significance of controlled airspace to the pilot flying under Visual Flight Rules is simply that more restrictive ceiling and visibility minimums are in effect. Of particular importance, however, is that, in the case of Visalia Municipal Airport, pilots are unable to enter or depart the control zone during conditions of reduced ceiling and visibility without first receiving a clearance from air traffic control. A clearance of this type would allow operation on either an instrument flight plan or Special VFR.[1] It should be noted that most pilots are not instrument rated, and must use the Special VFR technique. Thus, local pilots must contact air traffic control in order to obtain permission to enter or depart the control zone during times of restricted visibility or ceiling conditions.

Two Victor airways cross Tulare County and provide the aerial highways for aircraft operating on instrument flight plans or those aircraft using the radio navigational aids which form the airways. The Victor 23 airway crosses the westerly boundary of Tulare County over Pixley directly to Fresno Air Terminal. For IFR purposes, the minimum en route altitude for Victor 23 is 3,000 feet over most of Tulare County. Airway Victor 459 passes through Tulare County generally from Porterville over Alta Airport. Near Exeter, this airway is intercepted with Victor Airway 165, which proceeds directly from that location to Fresno. The minimum en route altitude for Victor 165 is 2,500 feet; for Victor 459 it is 3,500 feet in the Tulare County area.

---

1 Special VFR is an air traffic control technique that allows a pilot to operate VFR in a Control Zone having less than VFR ceiling/visibility minimums if the controller grants permission.

The Very High Frequency Omnidirectional Range (VOR) just south of Porterville is a navigational aid which is used to define Victor 459 and Victor 165. There are no navigational aids in Tulare County which define Victor 23, however the Visalia VOR located northwest of Visalia Airport does identify Laton intersection on this airway and is used for the instrument approach procedure at Visalia Municipal Airport.

Instrument approach procedures are available at both Visalia and Porterville airports. In the case of Porterville, air traffic control is handled by Meadows Field. Each approach procedure utilizes the VOR near each airport and is called a VOR approach. Depending on the runway in use and the time of day, the minimum descent altitude at Porterville is 496 feet and at Visalia is 389 feet above ground level. Visalia also has an ILS with a decision height of 200 feet and one-half mile visibility. Both approach procedures are useful when there is a definite ceiling above the minimum descent altitude; however, they are not effective during periods of heavy ground fog.

There are no significant airspace restrictions at this time which would influence airport planning, but as additional airport locations and runway alignments are considered, plans should be referred to the Federal Aviation Administration Air Traffic Control Branch for comment on planning.

2.2.3 Air Trade Activity

The purpose of this section of the report is to place in perspective the nature of air trade activity in the Tulare County area. Detailed information concerning the magnitude and characteristics of this activity will be presented and examined as a basis for the following section dealing with airport system demand and capacity requirements.

Air trade activity in Tulare County consists of that activity generated and influenced by the provision for and use of aviation facilities and services. In general terms, this activity is composed of air passenger and freight transportation via air carrier, business and recreational general aviation activity and the support services related to it. In Tulare County, agricultural aviation activity is significant due to the amount of agricultural land. Much of the aviation activity related to agriculture consists of aerial application of crop control materials.

As noted in the latter portion of Section 2.2.1 - Airport Inventory, a number of regionally significant airports surround Tulare County and attest to both the volume of aviation activity in the region and its interrelated nature. This fact also becomes apparent when viewing section 2.2.2 - Airspace and Navigation, which describes the air traffic control facilities and procedures in the region. However, the existence of the Air Trade Area outlined in the 1971 Plan is a subject that requires closer examination to determine the validity, and also the utility, of such a broad concept.

There is little argument that air transportation of people and cargo is important and does support economic development. This is evidenced in Tulare County by the scheduled air services at Visalia Municipal Airport, as well as aerial application and business-related flight activity at airports throughout the County. In some cases, the availability of good airport facilities may be an important consideration to the decisions of new businesses to locate in the region. Therefore, it remains important to accurately characterize the various

facets of this activity in a manner that is both meaningful and easily understood. Section 3.0 of this report presents information and analysis concerning this subject as an element of the demand and capacity analysis.

2.2.4 Pilot Survey

During March and April of 1981, a survey of over 300 pilots was conducted in Tulare County and neighboring areas to obtain information concerning the attitudes and needs of aviation facility users. A review of the survey results serves to augment the background data and inventory information contained in this report and provides a more well-rounded data base from which to examine the future of aviation in Tulare County. Where useful, the results of the 1981 pilot survey will be compared against those received for a similar survey conducted in December of 1969 as a part of the 1971 Plan.

The addresses of FAA registered pilots residing in zip codes lying within Tulare County or bordering the County were retrieved from official FAA records. A survey form was sent each pilot and their responses were received and tabulated. The results of the survey are presented below.

1. Certificates by Percent?

Student	24%
Private	56%
Commercial	19%
Airline Transport	less than 1%

2. How Long Have You Been a Licensed Pilot?

	TOTAL YEARS					
	1-10	10-20	20-30	30-40	40+	NR[1]
Student	40%	21%	5%	8%	3%	23%
Private	31%	17%	1%	2%	3%	46%
Commercial	4%	11%	4%	0%	0%	81%
Airline Transport	2%	0%	0%	2%	2%	94%

3. Check Your Age Group

14-19	1%	50-54	11%
20-24	5%	55-59	11.5%
25-29	7%	60-64	5%
30-34	11%	65-69	2%
35-39	20%	70-74	1%
40-44	14%	Over 75	.5%
45-49	10%	NR	2%

[1] No Response

4. Approximately how many hours do you fly per year?

1-20	4%	81-100	.5%
21-40	16%	101+	38%
41-60	12%	NR[1]	26.5%
61-80	3%		

	0-10	11-25	26-50	41-65	66-80	81-100	NR[1]
Percent Business (Non-Aviation)	18%	14%	6%	19%	9%	24%	10%
Percent Commercial (Instruction, Aerial AG.ER)	6%	2%	0	1%	4%	4%	83%
Percent Other	17%	11%	3%	13%	8%	34%	14%

5. Do you hold an instrument rating?

Yes 29% No 58% No Response 13%

If Yes:

How many times in the past year have you used your rating in actual IFR conditions?

Less than 20 70% Greater than 20 30%

Of the IFR Flight Plans you originate in Tulare County, what are your usual destination airports?

San Francisco	21%
SACTO	7%
Modesto	3%
Stockton	3%
San Diego	3%
Santa Rosa	3%
Woodlake	3%
Visalia	3%
Torrance	3%
Oakland	19%
Porterville	6.5%
Burbank	9.5%
LAX	16%

6. Do you participate in the ownership of an aircraft (or more than one aircraft)?

Yes 61% No 32% NR 7%

If Yes:
- Sole Ownership 30%
- Private Flying Club Membership 1%
- Partnership 33%
- Business Ownership 20%
- No Response 16%

How many aircraft are involved in the ownership?

0	-	6	19%
1	38%	7	0
2	8%	8	1%
3	3%	9+	1%
4	0	NR	28%
5	2%		

How many of these are hangared?

0	14%	6	0
1	23%	7	0
2	3%	8	0
3	2%	9+	.5%
4	0	NR	57.5%

Where is (are) the aircraft based?

Visalia	31%	Reedley Great Western	1%
Parkville	0	Porterville	11%
Tulare	9%	Strathmore	.5%
Woodlake	5%	3 Rivers	1%
Ford	.5%	Pruner	.5%
Sequoia	.5%	Lemoore	.5%
Alta	1%	Westlake Farm	1%
Green Acres	2%	Synanon	.5%
Eckert	4%	Exeter	.5%
Harmon (Pixley)	1%		

No Response: 29.5%

7. If you live within a city limits, give the name of the city[1]:

Visalia	42%	Strathmore	1%
Tulare	12%	3 Rivers	.5%
Woodlake	2%	Westlake Farm	.5%
Alta	.5%	Exeter	.5%
Green Acres	1%	Lindsay	3%
Eckert	2%	Dinuba	.5%
Reedley Great Western	7%	Badger	.5%
Porterville	6%	Fresno	.5%
		Bakersfield	.5%

No Response: 20%

From which airport do you normally fly?

Visalia	54%	Synanon	.5%
Sequoia	2.5%	Fresno	.5%
Alta	2.5%	Stratford	.5%
Green Acres	3%	LAX	.5%
Porterville	20%	Hanford	.5%
3 Rivers	.5%	Woodlake	6.5%
Pruner	.5%	Harmon (Pixley)	.5%
Westlake Farm	.5%		

No Response: 7%

How far is it from your residence to the airport listed above (miles)?

1-10	84%	41-50	2%
21-30	0%	51-70	.5%
31-40	4%	NR	9.5%

8. Do you expect a significant change in your flying habits in the future?

Yes[1] 43% No 27% No Response 30%

---

[1] Several respondents indicated residence in unincorporated areas and are shown by area name.

9. What is your opinion of the general adequacy of Tulare County Airports in terms of the following?

	Marginal	Fair	Good	No Response
Convenient proximity to population centers, recreation areas, etc.	4%	36%	55%	4%
Runway conditions/approaches	3%	0	0	97%
Runway lighting	5%	0	0	95%
Hangar storage	30%	0	0	70%
Tie-downs	16%	32%	33%	19%
Line services	17%	39%	30%	14%
Additional pilot services (rest rooms, food service, lounges, auto parking)	27%	43%	26%	4%
IFR Approach capabilities	19%	22%	29%	30%

10. Do you believe there is a need for additional airports? If so, where? Why?

Yes 33% No 39% No Response 28%

a. Percent Indicating the Need for a New Airport(s).....11%
b. Percent Indicating No Airport Development Necessary..... 7%
c. Percent Indicating No New Airport Development Necessary but Greater Development of Existing Airports Necessary.....54%

d. Suggested Locations of New Airports by Percentages
   1) Three Rivers (or similar fog-free site)..... 1%
   2) Visalia..... 2%
   3) Tulare..... 8%
   4) Other.....17%

---

1 A number of miscellaneous responses were received. Many respondents stated they would obtain a higher rating. Some mentioned that they expected additional business aviation activity. Others responses were not significant enough in number to categorize.

11. How much do you pay for hangar and/or tie-down ($ per month):

$ 1-8	.5%	$25-50	18%
$ 9-14	4.5%	$50+	23%
$15-25	12%	NR	42%

The responses to the 1981 survey differed little from those received during a similar pilot survey conducted as a part of the 1971 Plan. Several responses, however, are worthy of highlighting since they indicate change in aviation activity and behavior.

The most significant variance in responses to the 1971 and 1981 surveys occurred in relation to question 9, "What is your opinion of the general adequacy of Tulare County Airports...". Since 1971, the general attitude of aviation facility users (pilots) toward the condition of airport facilities has improved. For example, the 1971 survey results indicated that 38 percent of the respondents considered "additional pilot services" as marginal. In the 1981 survey, only 27 percent of the respondents rated these services as marginal. Also, only 19 percent in the 1981 survey indicated that IFR capability (instrument approaches/navigational aids) was marginal, down from 60 percent in 1971. In response to the same question, 29 percent in 1981 rated IFR capability as good, up from 12 percent in 1971.

The 1971 survey respondents rated the need for a new airport as a primary aviation development requirement (46 percent) versus 11 percent in 1981. Interestingly, 29 percent of the responses in 1971 indicated that no airport development was necessary. This percentage dropped to 7 in 1981. At the same time, however, more than twice (25 percent in 1971 versus 54 percent in 1981) as many respondents indicated that the development of a new airport was not necessary, but the further development of existing airports was needed.

Another interesting comparison between the 1971 and 1981 survey results can be made relative to the question concerning the suggested location of new airports. In 1971, 71 percent indicated that Three Rivers or a similar fog-free location was suggested. This percentage decreased to only 1 in the 1981 survey. The Dinuba and Exeter-Lindsay areas were mentioned as suggested sites by a total of 12 percent and 10 percent of the respondents respectively in the 1971 survey. The 1981 survey responses showed only 2 percent and 8 percent of the pilots mentioned these two areas.

Some change in pilot ratings was registered between1971 and 1981. The percentage of pilots with an instrument rating increased from 13 percent in 1971 to 29 percent in 1981. At the same time, the percentage of respondents with a student rating dropped from 31 percent to 24 percent. Pilots with a private rating increased from 46 percent in 1971, to 56 percent in 1981. Commercial and Airline Transport ratings showed no appreciable change over the period.

CHAPTER 3

3.0 AIRPORT SYSTEM DEMAND AND CAPACITY REQUIREMENTS

Analysis of airport system development alternatives for Tulare County must be based on an assessment of existing facilities and aviation activity, as well as reasonable estimates of future activity. The purposes of this section of the report are to present data concerning the nature and magnitude of existing airport system supply characteristics and to analyze forecasts of air carrier, general aviation and air cargo activities in the region. These analyses will be used as a basis for identifying the best estimates of the future demand and related facilities requirements for airports in Tulare County. Section 4.0, Alternative Airport Systems, will include system development scenarios which will service this demand to varying degrees. From the alternatives analyzed, one will be selected and recommended based on several pre-selected evaluative criteria. The recommended system alternative will then be detailed and an implementation program developed.

As a means of facilitating analysis of County-wide aviation system requirements and characterizing the relationship between facilities and demand, the County has been divided, for the purpose of this Plan, into five discrete subunits. In general, these units, which will be referred to as "aviation planning zones", are representative of the distribution of principal concentrations of population throughout the County. However, to conform to the availability of desirable base data, the "boundaries" of these zones are coincidental with aggregate census tract boundaries. Accordingly, inasmuch as these census divisions are somewhat arbitrarily drawn as they might relate to actual aviation-related planning considerations, the aviation planning zones described herein and utilized subsequently throughout this Plan should be regarded as generalized, with some significant areas of overlap and interchange.

Specifically, the five aviation planning zones described above are depicted in Figure 3-1 and may be designated for reference as follows:

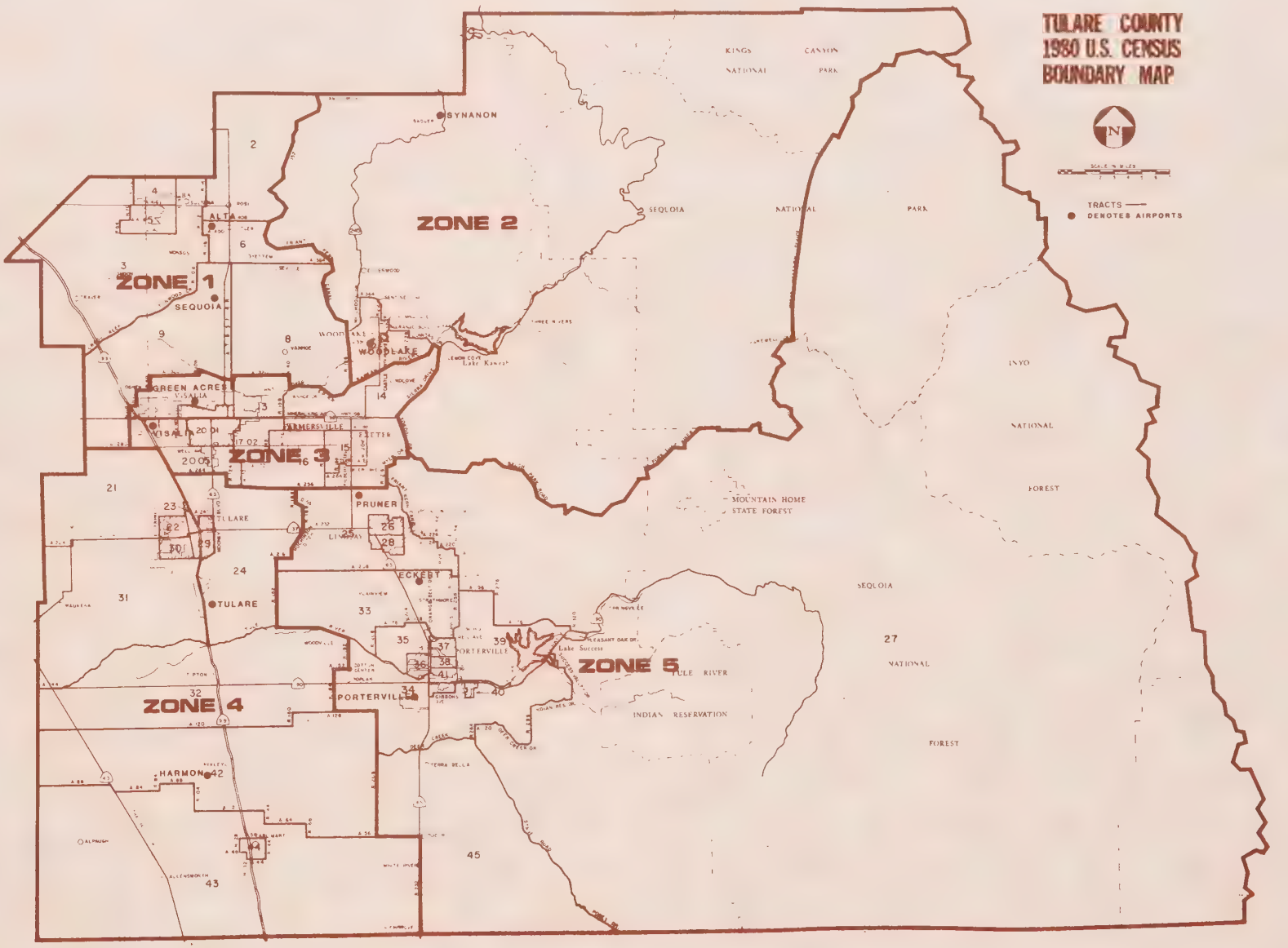
1) Northwest County/Dinuba
2) Northeast County/Woodlake
3) Visalia/Exeter/Farmersville
4) Southeast County/Porterville/Lindsay
5) Southwest County/Tulare

Each of the forgoing planning zones contains two or more of the existing major airports located in the County. In the following sections of this chapter, characteristics of aviation facility supply and demand for each of the planning zones, as well as for the County as a whole, will be discussed. In later chapters, plan alternatives and recommendations, accompanied by appropriate implementation strategies and programs, will be presented both County-wide and for each of the planning zones.

3.1 AVIATION FACILITY SUPPLY AND CAPACITY

The location and capacity of aviation facilities and services are important factors to consider during the analysis of existing and future aviation activity. If airport facilities, particularly tie-down, hangar and related space, are in short supply or expensive, the use of a facility may be impeded. Conversely, an airport offering an adequate supply of such facilities at a reasonable cost and

FIGURE 3-1



AVIATION PLANNING ZONES

good location will be attractive. With these considerations in mind, a facilities inventory was conducted for each of the ten public-use airports described in Section 2.2.1, Airport Inventory.

Tables 3-1 through 3-6 summarize the results of the facilities inventory conducted for each of the ten major airports located in Tulare County. The objective of this inventory was to provide up-to-date information on the location and size of existing airport facility components. This information was obtained for several broad categories of airport facilities which serve both commuter air carrier and general aviation operations. Later in the report, this information will be compared to the future facilities improvements which would be required to serve all of the forecasted aviation activity or any assumed segment of such activity.

3.2 AVIATION ACTIVITY FORECASTS

The previous section of this chapter describes the current supply of aviation-related facilities in the County. This "supply" should be kept in mind as the following section concerning aviation activity forecasts is reviewed. General information concerning the supply of existing facilities helps to partially explain the activity characteristics discussed in subsequent sections of this report since a supply of airport facilities must exist before any substantial activity may be realized.

This section of the report provides a description of the present extent of aviation activity in Tulare County, an analysis of historical aviation activity trends, and forecasts of such activity through the year 2000. In the aggregate, this description, analysis and forecasting will result in a profile of County-wide future requirements for aviation facilities. Historical trends are analyzed, along with both federal and State aviation forecasts, to arrive at the most reasonable estimate of future activity. The combination of these analyses serves to describe both the area of influence and the nature of aviation in Tulare County. This description is important to the delineation of facilities requirements and future airport system alternatives.

TABLE 3-1
AIRPORT FACILITIES INVENTORY
TULARE COUNTY (ALL)

Item		Unit	Amount
General Aviation			
1.	Terminal Building	Sq. Ft.	8,900
2.	Aircraft Apron Parking	Sq. Ft.	1,075,000
	A. Hangars	Sq. Ft.	321,160
	B. Hangared Spaces	No.	247
	C. Apron	Sq. Ft.	1,075,000
	D. Apron Spaces	No.	358
3.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	231,500
	B. Parking Spaces	No.	217
Commuter Air Carrier[1]			
1.	Passenger Gates	No.	1
2.	Terminal Building[2]	Sq. Ft.	5,400
3.	Aircraft Apron Parking[3]	Sq. Ft.	60,000
4.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	60,500
	B. Parking Spaces	No.	217

1 Visalia Municipal Airport Only.

2 Includes the entire existing Terminal Building at Visalia Municipal Airport.

3 Estimated portion designated for commuter air carrier use.

TABLE 3-2
AIRPORT FACILITIES INVENTORY
TULARE COUNTY
PLANNING ZONE NO. 1

Item		Unit	Amount
General Aviation			
1.	Terminal Building	Sq. Ft.	N/A
2.	Aircraft Apron Parking	Sq. Ft.	183,000
	A. Hangars	Sq. Ft.	32,500
	B. Hangared Spaces	No.	23
	C. Apron	Sq. Ft.	183,000
	D. Apron Spaces	No.	21
3.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	60,600
	B. Parking Spaces	No.	0
Commuter Air Carrier[1]			
1.	Passenger Gates	No.	
2.	Terminal Building[2]	Sq. Ft.	
3.	Aircraft Apron Parking[3]	Sq. Ft.	N/A
4.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	
	B. Parking Spaces	No.	

1 Visalia Municipal Airport Only.

2 Includes the entire existing Terminal Building at Visalia Municipal Airport.

3 Estimated portion designated for commuter air carrier use.

TABLE 3-3
AIRPORT FACILITIES INVENTORY
TULARE COUNTY
PLANNING ZONE NO. 2

Item	Unit	Amount
General Aviation		
1. Terminal Building	Sq. Ft.	N/A
2. Aircraft Apron Parking	Sq. Ft.	113,000
A. Hangars	Sq. Ft.	16,600
B. Hangared Spaces	No.	17
C. Apron	Sq. Ft.	113,000
D. Apron Spaces	No.	41
3. Public Vehicle Parking		
A. Parking	Sq. Ft.	31,500
B. Parking Spaces	No.	0
Commuter Air Carrier[1]		
1. Passenger Gates	No.	
2. Terminal Building[2]	Sq. Ft.	
3. Aircraft Apron Parking[3]	Sq. Ft.	N/A
4. Public Vehicle Parking		
A. Parking	Sq. Ft.	
B. Parking Spaces	No.	

1 Visalia Municipal Airport Only.

2 Includes the entire existing Terminal Building at Visalia Municipal Airport.

3 Estimated portion designated for commuter air carrier use.

TABLE 3-4
AIRPORT FACILITIES INVENTORY
TULARE COUNTY
PLANNING ZONE NO. 3

Item		Unit	Amount
General Aviation			
1.	Terminal Building	Sq. Ft.	N/A
2.	Aircraft Apron Parking	Sq. Ft.	237,500
	A. Hangars	Sq. Ft.	185,000
	B. Hangared Spaces	No.	120
	C. Apron	Sq. Ft.	237,500
	D. Apron Spaces	No.	116
3.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	8,000
	B. Parking Spaces	No.	0
Commuter Air Carrier[1]			
1.	Passenger Gates	No.	1
2.	Terminal Building[2]	Sq. Ft.	5,400
3.	Aircraft Apron Parking[3]	Sq. Ft.	60,000
4.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	60,500
	B. Parking Spaces	No.	217

1 Visalia Municipal Airport Only.

2 Includes the entire existing Terminal Building at Visalia Municipal Airport.

3 Estimated portion designated for commuter air carrier use.

TABLE 3-5
AIRPORT FACILITIES INVENTORY
TULARE COUNTY
PLANNING ZONE NO. 4

Item	Unit	Amount
General Aviation		
1. Terminal Building	Sq. Ft.	N/A
2. Aircraft Apron Parking	Sq. Ft.	201,500
A. Hangars	Sq. Ft.	29,000
B. Hangared Spaces	No.	33
C. Apron	Sq. Ft.	201,500
D. Apron Spaces	No.	77
3. Public Vehicle Parking		
A. Parking	Sq. Ft.	24,900
B. Parking Spaces	No.	0
Commuter Air Carrier[1]		
1. Passenger Gates	No.	
2. Terminal Building[2]	Sq. Ft.	
3. Aircraft Apron Parking[3]	Sq. Ft.	N/A
4. Public Vehicle Parking		
A. Parking	Sq. Ft.	
B. Parking Spaces	No.	

1 Visalia Municipal Airport Only.

2 Includes the entire existing Terminal Building at Visalia Municipal Airport.

3 Estimated portion designated for commuter air carrier use.

TABLE 3-6
AIRPORT FACILITIES INVENTORY
TULARE COUNTY
PLANNING ZONE NO. 5

Item		Unit	Amount
General Aviation			
1.	Terminal Building	Sq. Ft.	3,500
2.	Aircraft Apron Parking	Sq. Ft.	280,000
	A. Hangars	Sq. Ft.	58,060
	B. Hangared Spaces	No.	54
	C. Apron	Sq. Ft.	280,000
	D. Apron Spaces	No.	103
3.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	46,000
	B. Parking Spaces	No.	0
Commuter Air Carrier[1]			
1.	Passenger Gates	No.	
2.	Terminal Building[2]	Sq. Ft.	
3.	Aircraft Apron Parking[3]	Sq. Ft.	N/A
4.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	
	B. Parking Spaces	No.	

1 Visalia Municipal Airport only.

2 Includes the entire existing Terminal Building at Visalia Municipal Airport.

3 Estimated portion designated for commuter air carrier use.

This analysis places emphasis on general aviation activity, but does not overlook the importance of commercial aviation, such as aerial applicators, air carrier services and the potential future of air cargo. In addition, emphasis has been placed upon verification and use of the recently developed California State Department of Aeronautics activity forecasts wherever possible. These computer-based forecasts have been developed for various classes of airports throughout California and are intended to serve as a basis for State funding and development assistance for public airports.

3.2.1 Present Extent of Aviation Activity

The number of based aircraft and their location in Tulare County are important indicators of the extent of aviation activity in the area. This is true for many areas of the State, particularly those counties which have limited scheduled air carrier or commuter services. In Tulare County, Visalia Municipal Airport remains the only facility in the County with scheduled commuter air carrier services and one of the few airports currently involved in any air cargo activity.

Table 3-7 displays the current number of based aircraft by airport for the public-use facilities in Tulare County. The information presented in Table 3-7 was collected during the Airport Inventory described earlier in this report. Current California State Department of Aeronautics records and the Tulare County Tax Assessor's records for 1980 were also referenced during this analysis to arrive at the best and most up-to-date estimates possible. These estimates were subsequently reviewed with and substantiated by local airport management personnel. Figure 3-2 graphically depicts the geographical distribution of aircraft ownership in the County by displaying the density of aircraft ownership by zip code zone. It should be noted that this distribution does not necessarily reflect the physical location of based aircraft. Such physical distribution is more accurately reflected by comparing airport locations and based aircraft at each airport, in addition to the zip code zonal data shown herein.

For purposes of comparison, Figure 3-3 shows the geographical distribution of registered pilots from the most recent FAA records.[1] Inspection and comparison of the two distributions confirms the predictable high correlation of pilot residences with aircraft ownership.

All estimates of based aircraft were verified by each respective airport manager wherever possible and represent permanently based aircraft. It should be noted that a small percentage of all registered aircraft in the County must be classified as inactive. Field observations and experience in other areas of California and the United States support this assumption. Over the last several years, approximately 15 percent of all FAA registered aircraft have been classified as inactive.[2] This factor will be taken into consideration on a County-wide level when these estimates are employed for projection purposes later in this report.

---

[1] Source: Current records of registered pilots maintained by Myriad Computer Services for the FAA, Oklahoma City, Oklahoma.

[2] Census of U.S. Civil Aircraft, FAA, December, 1975, pg.21.

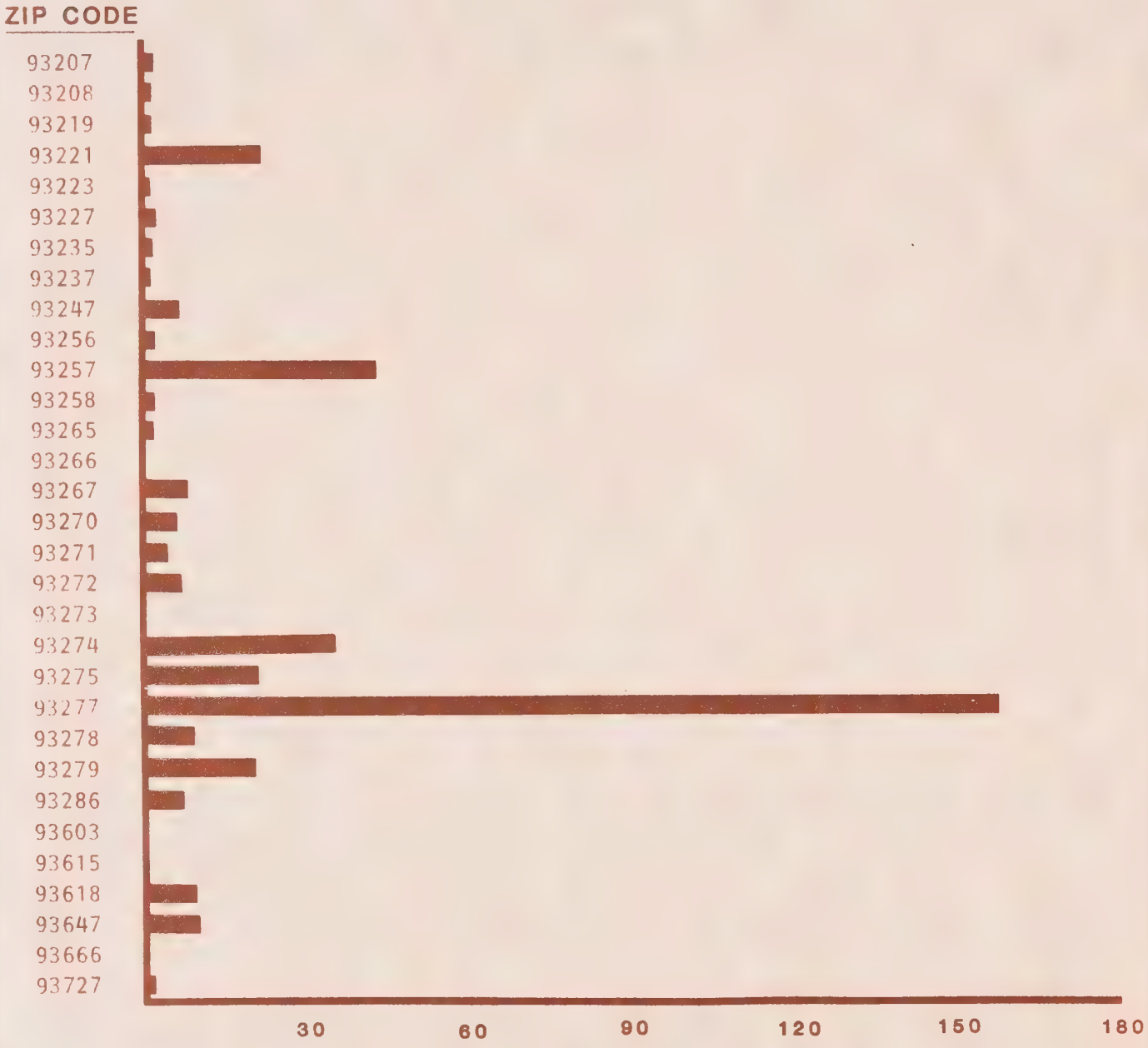
TABLE 3-7
DISTRIBUTION OF BASED AIRCRAFT BY AIRPORT
TULARE COUNTY

Airport	Based Aircraft	Percent of Aircraft County-wide
Visalia Municipal	181	35.5%
Porterville Municipal	92	18.1
Mefford Field	63	12.4
Woodlake	31	6.1
Sequoia Field	36	7.1
Harmon Field	9	1.8
Alta	22	4.3
Eckert	23	4.5
Green Acres	45	8.8
Pruner	7	1.4
Total	509	100.0%

Table 3-7 clearly shows the predominance of Visalia Municipal Airport with regard to the absolute number of based aircraft (165) and the proportion this represents of total based aircraft at airports located in the County (33.4 percent). Porterville Municipal Airport, Mefford Field, Green Acres Airport, Sequoia Field, and Woodlake Airport also host over 30 based aircraft each. The 22 and 23 based aircraft at Alta Airport and Eckert Field are notable, as both of these fields, like Green Acres with 45 based aircraft, are privately owned but open for public use.

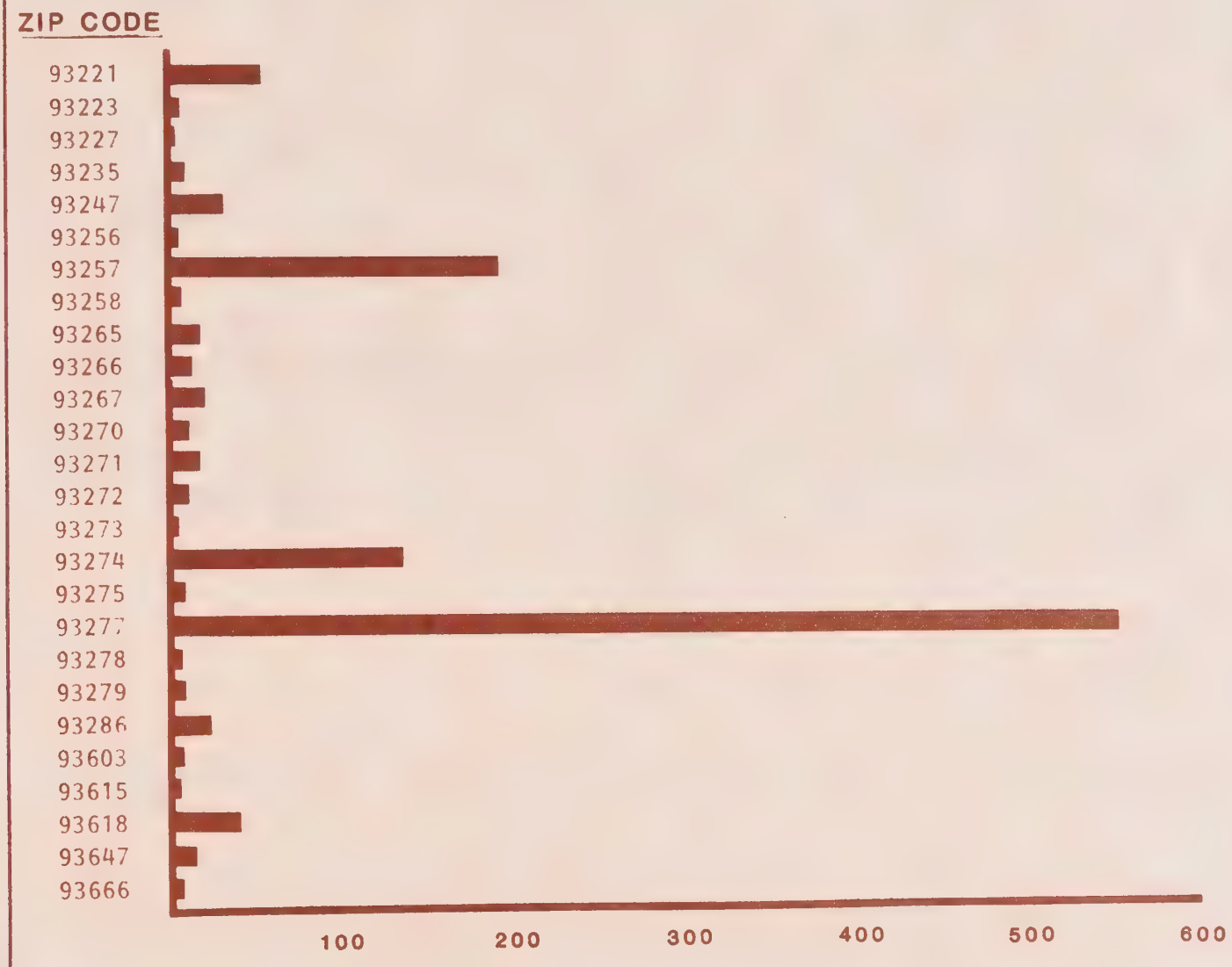
County Tax Assessor records for 1980 indicate a total of 484 aircraft are owned by persons with a Tulare County address. This number is slightly lower than the estimate for County-based aircraft shown in Table 3-7, indicating that some number of aircraft owned by nonresidents of the County are based at and utilize local facilities. This is particularly true when aircraft based at private and special-use airport facilities not accounted for in Table 3-7 are considered. It must be noted, however, that the actual number of based aircraft in the County, of course, differs slightly from the 509 shown in Table 3-7 due to the absence of an inventory of aircraft based at private, special use fields, to migration and immigration of aircraft owners, to location of based aircraft in the County by non-County residents, and to recently acquired aircraft not associated with airports and not yet shown on tax or other records.

FIGURE 3-2



Current Geographical Distribution of Based Aircraft Ownership by Zip Code Zone, Tulare County

FIGURE 3-3



Current Geographical Distribution of
FAA Registered Pilots by Zip Code Zone,
Tulare County

Table 3-8 shows the current number of total aircraft operations annually for each of the public use airports in the County. Total operations include the number of annual takeoffs and landings, including touch-and-go and other training operations, and as such, include itinerant operations. Estimates of total annual operations were derived from several sources, including airport management, the California Department of Aeronautics and the National Airport System Plan. Estimates from each of the foregoing sources vary considerably from one another and will be normalized later in this section of the report for purposes of analyzing projections.

By comparing the contents of the Tables 3-7 and 3-8, it is possible to develop general relationships between the number of based aircraft and total annual operations at each airport. However, such a comparison is difficult to make on an airport-by-airport basis since the estimates are not always reliable and the number of itinerant operations is not always known. However, when aggregated at the County-wide level, as shown in Table 3-9, the expression "annual operations per based aircraft" becomes more meaningful and useful as a planning tool.

The 768 total annual operations per based aircraft for Tulare County is significantly higher than that of the State of California, which was approximately 650 in 1980. Statewide and nationally, itinerant operations comprise approximately 47 percent[1] of total operations at all reliever and general aviation airports, with the remainder of operations classified as local. However, this comparison should be examined with the knowledge that Statewide scheduled air carrier and commuter operations comprise approximately 5.7 percent of total operations, as compared to only 1.1 percent in Tulare County.

---

1 Terminal Area Forecasts, Fiscal Years 1980-1981, FAA, November 1979, pg. 36 and 37.

TABLE 3-8
CURRENT[1]
DISTRIBUTION OF TOTAL ANNUAL OPERATIONS BY AIRPORT
TULARE COUNTY

Airport	Annual Operations	Percent
Visalia Municipal[1]	132,000	34.8
Porterville Municipal[1]	80,000[2]	21.1
Mefford Field[1]	49,000	12.9
Woodlake	22,000	5.8
Sequoia Field	35,000	9.2
Harmon Field	10,000	2.6
Alta	15,000	4.0
Eckert Field	10,000	2.6
Green Acres	20,000	5.3
Pruner	6,000	1.6
Total	379,000	100.0[3]

[1] Reflects the most recent 12 month estimate ending February of 1981 or December, 1980.

[2] National Airport System Plan current estimate.

[3] Percentages do not total 100.0 due to deletion of Synanon Airport.

TABLE 3-9
TOTAL ANNUAL OPERATIONS PER BASED AIRCRAFT
BY AIRPORT
TULARE COUNTY

Airport	Total Annual Operations/Aircraft[1]
Visalia Municipal	800
Porterville Municipal	870
Mefford Field	778
Woodlake	710
Sequoia Field	972
Harmon Field	1,111
Alta	682
Eckert Field[2]	435
Green Acres	444
Pruner	857
County-wide	768[3]

1 Includes itinerant operations.

2 Estimates of annual operations are believed to be low, thus the comparatively low number of annual operations per based aircraft.

3 This average is computed by comparing the total based aircraft shown in Table 3-7 with the total annual operations shown in Table 3-8

Similarly, comparisons of County and State-based aircraft averages per 1,000 persons indicate that Tulare County has a comparatively high number of based aircraft and significant general aviation activity. In 1980, Tulare County had an estimated 245,751 residents, compared to a based aircraft total of 509. The resulting based aircraft rating of 2.07 craft per 1,000 persons compares to the Statewide average of 1.2 per 1,000. Stated differently, the Tulare County ratio of based aircraft to general population is approximately 172 percent of the State average.

Visalia Municipal Airport - With its scheduled air carrier service offering both passenger and cargo capacity, Visalia Municipal Airport remains the most important facility in the County. Residents of Tulare County and eastern Kings County depend partially upon the services offered at Visalia, particularly the passenger service provided by Wings West Airlines, to serve their air transportation needs. Table 3-10 provides a profile of current activity at the airport.

Scheduled air carrier services have changed substantially in character since United and Swift Airlines discontinued service to Visalia in November of 1979. Since the reduction in service, both passenger and cargo activities have decreased greatly. Wings West Airlines currently offers six departures from Visalia daily, with the exception of Saturdays, when one departure is scheduled.

TABLE 3-10
VISALIA MUNICIPAL AIRPORT
SELECTED ACTIVITY CHARACTERISTICS

Activity	1984 Estimate
Operations	
General Aviation	134,000
Scheduled Commuter	4,000
Total	138,000

Air Cargo - Considerable space in the County's 1971 Airport Master Plan was devoted to the issue of locally-generated air cargo activity and the potential for expansion of this function in the regional aviation picture. A review of current documented levels of air cargo being handled by air carriers providing service locally, however, provides no evidence that air cargo activity in the County has grown significantly over the last decade. Contacts with various airport management personnel and fixed base operators at several airport facilities suggest that an increased role for air cargo in the County-wide aviation environment is still being discussed; the extent to which increased air cargo activity might reasonably be anticipated is addressed in more detail in the section of this chapter dealing with aviation activity forecasts.

Regionally Significant Airports - As noted earlier, there are several significant airports in the region surrounding Tulare County which affect aviation in the area and serve to further define aviation characteristics of the study area. Air carrier and general aviation operations at the Fresno Air Terminal, Chandler Field in Fresno and Meadows Field in Bakersfield are of particular interest, due to their size and their location within a reasonable driving time of Visalia and the remainder of Tulare County. Lemoore Naval Air Station is also significant in terms of overall levels of regional aviation activity, but less so in terms of either scheduled air carrier service of general aviation activity, since all of its operations are military related. Frenso Air Terminal currently handles a significant portion of the demand for passenger service in Tulare County due to its close proximity and more frequent services. Also, Meadows Field in Bakersfield attracts air passengers from southern Tulare County. In both cases, most of the air passengers seeking service are traveling medium to long distances to their ultimate destinations. Short distance commuter service to Los Angeles and San Francisco remain attractive at Visalia due to the schedules provided by Wings West Airlines.

Table 3-11 provides recent indicators of aviation activity at Fresno Air Terminal, Chandler Field and Meadows Field. Fresno Air Terminal is the busiest civilian airport in the central San Joaquin Valley region, followed by Meadows Field in Bakersfield. Recently the Fresno Air Terminal ranked 84th nationally in terms of total annual enplanements at air carrier airports.[1]

Hanford Municipal Airport and Corcoran Airport, in Kings County, are also important facilities in the region. Estimates prepared by the FAA indicate that Hanford Municipal Airport had 66 based aircraft and Corcoran had 18 in 1979. Using the Tulare County average of 768 annual operations per based aircraft described earlier, it can be estimated that Hanford had an estimated 50,700 operations and Corcoran 13,800 in 1979.

---

[1] Terminal Area Forecasts, Fiscal Years 1980-81, FAA, November, 1979. pg. 15.

TABLE 3-11
AVIATION ACTIVITY AT SELECTED AIRPORTS
IN THE REGION

Airport	Total	Air Carrier	Air Taxi[1]	General Aviation	Military
Fresno Air Terminal					
Itinerant	210,660	21,776	12,131	165,311	11,442
Local	57,995	-	-	53,037	4,958
Total	268,655	21,776	12,131	218,348	16,400
Chandler Field (Fresno)					
Itinerant	50,179	4	1,863	48,242	70
Local	25,538	-	-	25,482	56
Total	75,717	4	1,863	73,724	126
Meadows Fields (Bakersfield)					
Itinerant	134,469	4,648	8,697	118,683	2,441
Local	41,074	-	-	39,607	1,467
Total	175,543	4,648	8,697	158,290	3,908

[1] Air taxi refers to an operation which 1) performs at least five round trips per week between two or more points and publishes schedules; or 2) transports mail under contact with the U.S. Postal Service.

Source: FAA Air Traffic Activity, Fiscal Year 1979, FAA, September 30, 1979 pg. 19.

3.2.2 Historical Trends

The nature and magnitude of population and economic growth in Tulare County over the last decade was described in some detail in Chapter 2.0, Existing Conditions. Along with this general growth there has been a significant increase in the level of aviation activity in the County. This increase follows the expanding interest of many State residents in general aviation and the continuing high level of aerial application of crop control materials in the region, as well as sustained commercial air passenger travel demand.

Table 3-12 displays the characteristics of aviation activity growth between 1970 and 1980 in the County by showing changes in based aircraft totals by type of aircraft for each of the eleven major airports. It is significant to note the percentage increases in based aircraft at Visalia (330 percent), Woodlake (244 percent), and Sequoia (140 percent) between 1970 and 1980. County-wide, based aircraft increased by 94 percent between 1970 and 1980.

The annual rate of growth in based aircraft at the County's public use airports since 1970 has been 6.6 percent,compared to the Statewide growth rate of 5.0 percent. This compares with the 6.5 percent annual rate of growth in based aircraft for the United States. In viewing these growth rates, it should be mentioned that California already has the highest number of general aviation based aircraft (over 30,000) and pilots (117,000) in the United States.[1] Also, California has over 800 airports and the busiest scheduled passenger air link in the United States (between Los Angeles and San Francisco).

Total annual operations for the County increased from an estimated 217,000 in 1970 to 379,600 in 1980, a 75 percent jump. The proportionate difference between the growth of based aircraft (94 percent) over the period and total operations (75 percent) is in part due to decreasing operations per aircraft because of higher operating costs and in part to the independent estimates recorded for these categories. In general, the estimates of total annual operations are less reliable than those for based aircraft. A comparison of total annual operations per based aircraft between 1970 and 1980 is difficult, due to the suspect reliability of the annual operations estimates mentioned earlier. However, a comparison of the two ratios reveals that little real change has occurred since 1970. The 1970 ratio was 831 total annual operations per based aircraft, as opposed to 768 for 1980. Visalia Municipal Airport shows a constant ratio of approximately 780 for the last five years.[2] Neither ratio includes a factor to account for inactive aircraft, not thought to be statistically important.

---

1 National Airport System Plan, Revised Statistics 1980-1989, FAA, pg. 58.

2 Visalia Municipal Airport Master Plan, Preliminary 1980 Data. August Compton & Associates.

TABLE 3-12
COMPARISON OF 1970 AND 1980
BASED AIRCRAFT (BY TYPE) BY AIRPORT
TULARE COUNTY

Airport	BASED AIRCRAFT						
	1970			1980			
	Single Engine	Multi[1] Engine	Total	Single Engine	Multi[1] Engine	Total	Total Percent Change 1970-1980
Visalia Municipal	45	5	50	125	40	165	330
Porterville Municipal	53	9	62	55	37	92	48
Mefford Field	40	2	42	60	3	63	50
Woodlake	7	2	9	29	2	31	244
Sequoia Field	12	3	15	24	12	36	140
Harmon Field	-	-	-	9	0	9	-
Alta	18	2	20	20	2	22	10
Eckert Field	18	1	19	22	1	23	21
Green Acres	26	5	31	44	1	45	45
Pruner	5	2	7	5	2	7	0
Total	244	31	255	393	100	493	94

[1] Includes helicopter and all aircraft exluding single-engine.

Source: Tulare County Airport Master Plan (1971) and the February 1981 Airport Inventory of Tulare County.

In terms of change in based aircraft per 1,000 persons since 1970, Tulare County has shown significant growth. In 1970, the County had 1.39 based aircraft per 1,000 persons compared to the current ratio of 2.01, a 45 percent increase. This translates into annual growth rate of 3.6 percent.

Activity at the Visalia Municipal Airport has increased significantly since 1970 in terms of based aircraft, operations, air passengers and air cargo. Table 3-13 shows total annual operations, air passenger[1] and air cargo data by year for the ten-year period from 1970 to 1980. The effect of the United and Swift Airlines decision to discontinue service during 1979 can be clearly seen in the data shown.

The volume of air cargo handled at Visalia has decreased substantially over the last several years, and it is evident that this is due to changes in both the quantity and quality of available service, as opposed to any real decrease in demand. Nearly five times the 1979 volume of air cargo was handled annually over the period from 1970 to 1978. However, in 1979, as United withdrew its 737's from service to Visalia, the volume of cargo carried declined.

Figure 3-4 provides a composite history of important historical trends in Tulare County aviation since 1970. This figure serves to depict the general trend lines which must be analyzed and compared with other aviation activity forecasts in order to arrive at reliable estimates of future activity levels.

3.2.3 State and Federal Forecasts of Aviation Demand

The FAA and California Department of Aeronautics are involved in the forecasting of aviation activity for the State of California. These forecasts serve as the basis for the identification of airport development priorities, revisions to airspace navigation requirements and program funding allocations from federal and State sources. As such, these forecasts are important not only to the respective government funding agency, but also to local elected officials and interested groups and individuals involved in aviation planning and development. Therefore, it is important to review and analyze these forecasts to ensure an understanding of their accuracy and usefulness in developing the airport system plan for Tulare County.

FAA Terminal Area Forecasts - The FAA Aviation Forecast Branch has developed an ongoing program of activity forecasting for purposes of monitoring and anticipating future aviation requirements for each of its 11 regions. California falls within FAA's Western Region and is one of the busiest states in terms of activity, leading the nation in Total FAA towers with over 50. This is significant because airports must meet at least one of the following basic criteria[2] in order to be included in the FAA's 10-year forecasts:

---

[1] The total of passenger embarkations and disembarkations.

[2] Terminal Area Forecasts, Fiscal Years 1980-1991, FAA, November, 1979. pg.3

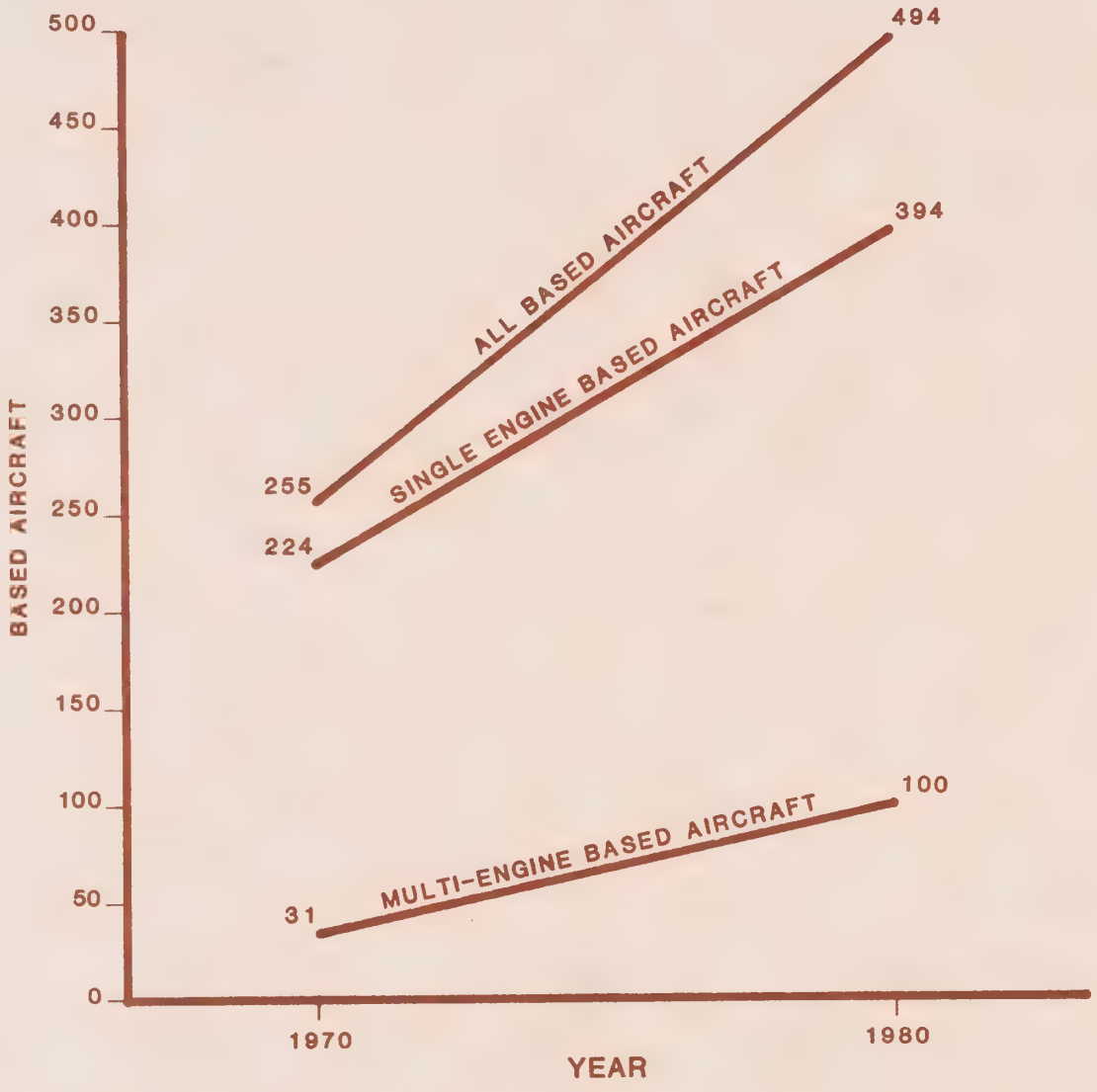
TABLE 3-13
1970 - 1980
HISTORICAL ACTIVITY PROFILE
VISALIA MUNICIPAL AIRPORT
(000'S)

YEAR	TOTAL[1] OPERATIONS	AIR PASSENGER	AIR CARGO (lbs)
1970	40	7	510
1971	46	16	414
1972	52	15	439
1973	58	17	534
1974	64	18	455
1975	70	34	477
1976	80	54	660
1977	90	63	584
1978	105	55	477
1979	120	20	101
1980	132	35	-

[1] Estimated based on FAA counts.

Source: Visalia Municipal Airport Master Plan, Preliminary 1980 data. August W. Compton & Associates.

FIGURE 3-4



HISTORICAL TRENDS IN
BASED AIRCRAFT GROWTH

(1) Existing FAA tower;
(2) Candidate for an FAA tower;
(3) Currently receiving or forecast to receive certificated route air carrier or scheduled passenger commuter service; or
(4) Any general aviation airport that will exceed 60,000 itinerant or 100,000 total operations annually by 1981.

These forecasts are used in the development of the National Airport System Plan mentioned earlier. In addition to Visalia Municipal Airport, there are three other airports near Tulare County which are of interest. These are: 1) Fresno Air Terminal, 2) Chandler Field, and 3) Meadows Field. Tables 3-14 through 3-16 summarize the forecasted growth at each of the airports through 1991. A brief examination of this data reveals the predominance of the Fresno Air Terminal in terms of aviation activity in the region, with over 366,000 total annual operations forecast for 1991. This forecast has been recently increased to 399,000 in the National Airport System Plan.

Table 3-17 shows the FAA forecasts for Visalia which have also been adjusted upwards for the 1991 period to 122,000 in the revised estimates for the National Airport System Plan. This estimate is obviously low, since the current annual operations total an estimated 132,000.

Table 3-18 provides a comparison of the National, FAA Western Region and California state growth factors developed by FAA for general aviation itinerant and local operations. These factors relate to the activity forecasts shown in Tables 3-14 through 3-17. The FAA has produced these indices as a part of the documentation for their forecasting base, as well as to assist in the development of additional forecasts at other airports. By comparing the annual rate of growth that each of these factors represents, it is possible to develop forecasting parameters useful in preparing estimates for Tulare County. The annual growth rates for itinerant operations vary from 3.0 percent nationally for the period of 1981-1991, to 2.2 percent for California. For local operations, the range is from 2.6 percent to 2.4 percent, respectively. This compares to the 5.5 percent annual growth rate in total operations for Tulare County between 1970 and 1980.

TABLE 3-14
FAA ACTIVITY FORECAST
VISALIA MUNICIPAL AIRPORT

	(---ENPLANEMENTS (000) ---)				(-----AIRCRAFT OPERATIONS (000)-----)								
	(----------ITINERANT----------)								(--------LOCAL--------)				
Year	Air Carr.	Air Taxi	Comm.	Total	Air Carr.	AT +[1] Comm.	GA[2]	MIL[3]	Total	GA	MIL	Total	Total Ops.
1980	0	5	30	35	0	10	39	0	49	38	0	38	87
1981	0	5	32	37	0	11	41	0	51	40	0	40	92
1982	0	5	34	39	0	11	42	0	53	41	0	41	95
1983	0	5	37	42	0	12	43	0	56	43	0	43	98
1984	0	5	39	44	0	13	45	0	58	44	0	44	102
1985	0	5	41	46	0	14	46	0	60	45	0	45	105
1986	0	5	44	49	0	14	47	0	61	46	0	46	107
1987	0	5	47	52	0	15	47	0	62	47	0	47	109
1988	0	5	49	54	0	15	48	0	63	47	0	47	110
1989	0	5	52	57	0	16	48	0	64	48	0	48	111
1990	0	5	55	60	0	16	49	0	65	48	0	48	113
1991	0	5	57	62	0	17	49	0	66	48	0	48	114

[1] Air Taxi and Commercial

[2] GA = General Aviation

[3] MIL = Military

Source: Terminal Area Forecasts, Fiscal Years 1980-1991, FAA, November, 1979, pg. 435.

TABLE 3-15
FAA ACTIVITY FORECAST
VISALIA MUNICIPAL AIRPORT

	(---ENPLANEMENTS (000) ---)				(-----AIRCRAFT OPERATIONS (000)-----)								
	(----------ITINERANT----------)									(--------LOCAL--------)			
Year	Air Carr.	Air Taxi	Comm.	Total	Air Carr.	AT +[1] Comm.	GA[2]	MIL[3]	Total	GA	MIL	Total	Total Ops.
1980	547	1	39	587	18	20	167	12	217	62	7	69	286
1981	576	1	42	618	18	22	176	12	229	65	7	72	301
1982	594	1	45	639	19	23	182	12	236	67	7	74	310
1983	632	1	47	680	19	25	188	12	244	69	7	76	320
1984	661	1	50	712	20	27	194	12	252	71	7	78	330
1985	694	1	53	748	20	28	200	12	260	73	7	80	340
1986	727	1	57	785	20	29	201	12	263	74	7	81	344
1987	760	1	60	821	21	30	204	12	268	75	7	82	350
1988	788	1	64	853	21	32	206	12	271	77	7	84	355
1989	816	1	67	884	21	32	207	12	274	77	7	84	358
1990	845	1	71	917	22	32	210	12	278	78	7	85	362
1991	878	1	73	953	22	34	212	12	280	78	7	85	366

1 Air Taxi and Commercial

2 GA = General Aviation

3 MIL = Military

Source: Terminal Area Forecasts, Fiscal Years, 1980-1991, FAA, November, 1979. pg. 435.

TABLE 3-16
FAA ACTIVITY FORECAST
VISALIA MUNICIPAL AIRPORT

	(---ENPLANEMENTS (000) ---)				(-----AIRCRAFT OPERATIONS (000)-----)								
	(----------ITINERANT----------)									(--------LOCAL--------)			
Year	Air Carr.	Air Taxi	Comm.	Total	Air Carr.	AT +[1] Comm.	GA[2]	MIL[3]	Total	GA	MIL	Total	Total Ops.
1980	0	3	0	3	0	3	50	0	54	25	0	25	79
1981	0	3	0	3	0	3	53	0	57	26	0	26	83
1982	0	4	0	4	0	4	55	0	59	27	0	27	86
1983	0	4	0	4	0	4	57	0	61	28	0	28	89
1984	0	4	0	4	0	4	59	0	63	28	0	29	91
1985	0	5	0	5	0	4	60	0	65	29	0	29	94
1986	0	6	0	6	0	5	61	0	65	30	0	30	95
1987	0	6	0	6	0	5	62	0	67	30	0	30	97
1988	0	7	0	7	0	5	62	0	67	31	0	31	98
1989	0	8	0	8	0	5	63	0	68	31	0	31	99
1990	0	9	0	9	0	5	64	0	69	31	0	31	100
1991	0	10	0	10	0	5	64	0	69	31	0	32	101

[1] Air Taxi and Commercial

[2] GA = General Aviation

[3] MIL + Military

Source: Terminal Area Forecasts, Fiscal Years 1980-1991, FAA, November, 1979. pg. 435.

TABLE 3-17
FAA ACTIVITY FORECAST
VISALIA MUNICIPAL AIRPORT

	(---ENPLANEMENTS (000) ---)				(-----AIRCRAFT OPERATIONS (000)-----)								
	(----------ITINERANT----------)								(--------LOCAL--------)				
Year	Air Carr.	Air Taxi	Comm.	Total	Air Carr.	AT +[1] Comm.	GA[2]	MIL[3]	Total	GA	MIL	Total	Total Ops.
1980	61	1	100	162	3	12	119	3	137	42	2	43	180
1981	64	1	107	173	3	13	126	3	145	44	2	46	190
1982	66	1	115	182	3	14	130	3	150	45	2	47	197
1983	71	1	122	194	3	15	135	3	155	46	2	48	203
1984	74	1	130	205	3	16	139	3	160	48	2	50	210
1985	77	1	138	216	3	16	143	3	166	49	2	51	216
1986	81	2	146	228	3	17	144	3	167	50	2	52	219
1987	85	2	155	241	3	18	147	3	170	51	2	53	223
1988	88	2	164	254	4	19	148	3	172	51	2	53	226
1989	91	2	173	266	4	19	149	3	174	52	2	54	228
1990	94	2	182	278	4	19	151	3	176	52	2	54	231
1991	98	2	189	289	4	20	152	3	178	53	2	54	233

[1] Air Taxi and Commercial

[2] GA = General Aviation

[3] MIL = Military

Source: Terminal Area Forecasts, Fiscal Years 1980-1991, FAA, November, 1979. pg. 435.

TABLE 3-18
GENERAL AVIATION GROWTH FACTORS
AT
NONTOWERED AIRPORTS FOR SELECTED YEARS

	Itinerant Operations Growth Factor[1] from 1978 to:			Local Operations Growth Factor[1] from 1978 to:		
Area	1981	1985	1991	1981	1985	1991
National	1.17	1.42	1.57	1.15	1.36	1.49
Western Region(2)	1.22	1.44	1.57	1.12	1.32	1.45
California	1.21	1.40	1.57	1.15	1.33	1.46

1 Percent change from 1978 to each control year shown.

2 The FAA's Western Region includes Arizona, California, and Nevada.

Source: Terminal Area Forecasts, Fiscal Years 1980-1991, FAA, November, 1979.

This comparison shows the significant difference between Tulare County growth and that of both California and the nation. For the period 1980 to 1990 it appears that the FAA forecasts are somewhat conservative for application in this study area. These forecast rates will be discussed again later in this section as a benchmark for comparison purposes representing the probable low-range of any forecast for Tulare County.

California Airport System Plan (CASP) Forecasts - During March of 1981, the California Department of Aeronautics developed updated forecasts of Statewide aviation activity as an element of the California Airport System Plan. These forecasts are based on a computer model developed as a part of the Statewide Master Plan of Aviation in 1972. This model recently has been updated and refined, providing a systematic method for the development of aviation activity forecasts.

Several input variables were utilized in the forecast model, including basic population, employment and income data, anticipated access characteristics, airline service factors, fleet mix, and other factors. Through discussions with Department of Aeronautics forecasting staff, several of the important values for the basic model input variables were isolated for Tulare County and are shown below:

Variable (County Total)	Tulare County Value
Population	264,200
Employment	111,187
Median Household Income	$12,000

Each of these figures appears slightly high, notably the population estimate. Census counts from the U. S. Bureau of the Census indicate a 1980 County population of 245,752, approximately seven percent below that used in the model. By using the higher values, the computer model will produce a forecast that could be considered conservatively high.

Table 3-19 displays the preliminary results of the CASP forecasts of based aircraft by Aviation Planning Zone for each of the control years used in this study. These forecasts will be refined by the Department of Aeronautics later, but are considered representative of the final forecasts.

3.2.4 Updated Tulare County Airport System Plan Forecasts

This section of the report presents a comparative analysis of several aviation activity forecasts for Tulare County. Four different independent forecasts have been analyzed and compared during the course of this study for the control years 1985, 1990, 1995 and 2000. These forecasts include:

1) NASP 1980-1991 forecasts,
2) CASP 1985 and 1995 forecasts (preliminary),
3) Trend forecast,
4) Population based forecast.

Since the NASP AND CASP forecasts have already been discussed in a preliminary fashion, the first portion of this analysis will cover the "trend" and population based forecasts developed independently as a part of this study.

Trend Forecast - Using the historical trend data described in Section 3.2.2, an independent analysis was conducted to arrive at an extrapolated value for each of the four control years. The results of this analysis are shown in Table 3-19 for total based aircraft in the County. It should be noted that this forecast is based on a 6.6 percent annual rate of growth (Tulare County average between 1970 and 1980) and, therefore, should be considered somewhat high. A sustained growth of such magnitude is possible, but considered unlikely due to the rising cost of aircraft ownership and operation, particularly fuel costs. It is anticipated that this growth rate will begin to slow during the next few years but remain significant.

TABLE 3-19
COMPARISON OF BASED AIRCRAFT FORECASTS
TULARE COUNTY

	Tulare County				
	Based Aircraft Forecast				
Control Year	NASP[1]	CASP[2]	Trend[3]	Population[4] Case A	Case B
1985	542	780	725	561	668
1990	619	1,010	998	622	854
1995	707	1,250	1,374	653	1,069
2000	808	1,485	1,891	686	1,293

1 NASP Forecast was based upon general aviation growth factors displayed in Table 3-13 for California.

2 The CASP Forecast is preliminary and should be considered only representative of forthcoming final forecasts by the California Department of Aeronautics.

3 The trend forecast is an extrapolation of historical based aircraft growth during the period 1970-1980.

4 The population based forecast utilized the State Department of Finance population projections shown in Table 2-4 and the based aircraft per 1,000 persons ratio discussed in Section 3.2.1.

Population-Based Forecast - For comparison purposes, a population-based forecast was developed using the projections prepared by the California Department of Finance. These estimates are contained in Table 2-4 and are summarized below:

Year	Total County Population
1985	279,300
1990	309,400
1995	325,000
2000	341,100

The 1980 based aircraft population ratio described in Section 3.2.1 of 2.01 based aircraft per 1,000 persons was applied to the population projections shown herein to arrive at the control year forecasts shown in Table 3-19. These case "A" forecasts do not take into consideration any change in the ratio of based aircraft to population during the forecast period. Case "B" forecasts include an adjustment for the forecast period to reflect the growth in this ratio which stood at 1.39 based aircraft per 1,000 persons compared to the 2.01 today. This translates into an annual rate of growth in the ratio of 3.6 percent. By factoring the ratio for 1980 by this annual growth rate, adjustments in the coefficients for each control year were developed and applied to the population data described earlier. The resulting forecasts are also shown in Table 3-19 under the population "B" forecast.

Air Cargo Forecast - In order to reaffirm, or alternatively, disclaim, the conclusions drawn in the 1971 Tulare County Airport Master Plan that air freight in general, and agriculturally-related air freight in particular, will exert a minimum of influence on County-wide aviation activity, an analysis based on both historical air cargo records over the past decade and on contacts with selected agencies and individuals potentially affected by the issue has been conducted. To summarize the outcome of this analysis, the 1971 Plan conclusion continues to appear sound. As noted earlier in this chapter, documented air cargo shipments originating and terminating in the County have actually decreased since 1970, although this decrease can be attributed at least in part to the United/Swift airlines pull-out from local service in 1979. Moreover, discussions with local agricultural officials and producers have disclosed the prevalent opinion that air shipment of locally-produced agricultural crop products is not currently a service for which strong demand exists nor is such demand likely to become more pronounced under foreseeable circumstances in the future over the time frame addressed by this Plan. Production of crops in and around Tulare County which are of extraordinary high value and which are highly perishable is less prevalent than in other parts of the State, rendering the higher time value afforded by air transport less important.

Notwithstanding the absence of any substantial evidence of increased potential demand for air freight capacity in the County, two non-quantifiable indications that local air freight activities could increase are represented by: (1) an expressed desire by a fixed base operator at one County airport (Sequoia Field) to undertake commercial air cargo activities; and (2) the position of the City of Tulare that development of an industrially oriented "agricultural center" adjacent to its airport facility may generate related air freight shipments to Mefford Field. In neither of the foregoing cases can the actual extent to which air cargo activities would expand in relationship to the overall aviation environment in the County be assessed at this time.

Forecasts of future air cargo activity have been separately prepared as a part of the Visalia Airport Master Plan update in 1980. These forecasts have been reviewed and are considered, for purposes of this study, to be somewhat high. However, these forecasts have been included in the section dealing with the Visalia Municipal Airport for long-range planning purposes as they represent a conservatively high estimate. The actual volume of future air cargo activity at Visalia is highly dependent on market decisions made by air carriers and the community.

Forecast Selection - The various forecasts displayed in Table 3-19 are intended to demonstrate the wide range of based aircraft estimates which are possible through the application of various analysis methods and assumptions. The NASP and Population Case "A" forecasts are considered low, based upon comparisons with the other forecasts. The remaining CASP, Trend, and Population Case "B" forecasts are considered more reasonable.

For purposes of system planning, the CASP forecasts of based aircraft described earlier have been selected for use. The Department of Aeronautics CASP forecasts of based aircraft have been developed utilizing a rigorous, computer-based method, and have produced estimates falling within the range of forecasts shown herein. Therefore, the CASP forecasts will be used in subsequent study efforts as representative of future aviation demand. It should be noted that these forecasts are preliminary and subject to refinements, as the Department of Aeronautics completes the current forecasting project. Tables 3-20 through 3-25 provide a summary of the CASP based aviation activity forecasts for Tulare County through the year 2000.

The CASP forecasts of based aircraft were used as a basis for an independent estimate of total, itinerant and local operations for each control year shown in Tables 3-20 through 3-25. Two important assumptions were employed in arriving at these estimates of operational activity: 1) the number of total annual operations per based aircraft will continue to decline as it has during the last decade due to increased operating costs; and 2) itinerant operations as a percentage of total operations will continue to increase slightly while local operations will decrease somewhat.

The first assumption concerning a decline in operations per based aircraft is consistent with both national and California activity forecasts discussed earlier in Section 3.2.2. The second assumption is based on forecasts developed from the FAA shown previously in Table 3-18. The forecasts contained in Tables 3-21 through 3-25 consider both of these factors as shown below:

Year	Total Annual Operations/ Based Aircraft	Percent Itinerant Operations of Total Operations
1980	768	49
1985	735	51
1990	708	53
1995	682	55
2000	658	57

Total annual operations for the County's five Aviation Planning Zones, summarized in Table 3-20, include scheduled air carrier operations at Visalia Municipal Airport. Therefore, the totals shown in Table 3-20 represent all aviation activity forecasted for the County through the year 2000.

The forecasts of based aircraft by control year were distributed by single and multi-engine airplanes based on a review of the historical growth in multi-engine aircraft in Tulare County since 1970 as shown in Table 3-12. In 1970, approximately 14 percent of the County's based aircraft were multi-engine. By 1980, this percentage had increased to roughly twenty-five percent. This rate of increase is not expected to continue through the planning period due to rising costs of small aircraft and the higher operating and maintenance costs associated with these larger airplanes. In view of these considerations, it was assumed that by the end of the planning period, the year 2000, no more than thirty-two percent of total based aircraft in Tulare County would be multi-engine, with the remainder being single engine.

TABLE 3-20
AVIATION ACTIVITY FORECAST
ALL AVIATION PLANNING ZONES
TULARE COUNTY

Item	Forecast			
	1985	1990	1995	2000
Total Operations [1]	583,300	730,100	872,500	1,002,100
General Aviation	572,300	715,100	852,500	977,100
Itinerant	292,400	379,000	468,900	557,000
Local	280,900	336,100	383,600	420,100
Scheduled Air Carrier[2]	10,000	15,000	20,000	25,000
Enplaned Passengers[2]	25,000	37,000	46,000	66,000
Air Cargo (on-off, lbs)[3]	1,300,000	2,000,000	2,500,000	3,000,000
Total Based Aircraft	780	1,010	1,250	1,485
Single Engine	594	727	875	1,010
Multi-Engine	186	283	375	475

[1] Includes scheduled air carrier operations.

[2] Estimate based on FAA forecasts contained in Terminal Area Forecasts, Fiscal Year 1980-1991, FAA, November, 1979, pg. 457, and Preliminary Forecasts developed for the Visalia Master Plan, August W. Compton & Associates.

[3] Visalia Master Plan, Preliminary 1980 data, August W. Compton & Associates.

TABLE 3-21
AVIATION ACTIVITY FORECAST
NORTHWEST COUNTY/DINUBA
AVIATION PLANNING ZONE

Item	Forecast			
	1985	1990	1995	2000
Total Operations	68,400	85,700	110,500	127,000
General Aviation	68,400	85,700	110,500	127,000
Itinerant	34,900	45,400	60,800	72,400
Local	33,500	40,300	49,700	54,600
Scheduled Air Carrier	-	-	-	-
Enplaned Passengers	-	-	-	-
Air Cargo (on-off, lbs)	-	-	-	-
Total Based Aircraft	93	121	162	193
Single Engine	71	87	113	131
Multi-Engine	22	34	49	62

TABLE 3-22
AVIATION ACTIVITY FORECAST
NORTHWEST COUNTY/WOODLAKE
AVIATION PLANNING ZONE

Item	Forecast			
	1985	1990	1995	2000
Total Operations	34,500	43,200	60,000	68,400
General Aviation	34,500	43,200	60,000	68,400
Itinerant	17,600	22,700	33,000	39,000
Local	16,900	20,300	27,000	29,400
Scheduled Air Carrier	-	-	-	-
Enplaned Passenger	-	-	-	-
Air Cargo (on-off, lbs)	-	-	-	-
Total Based Aircraft	47	61	88	104
Single Engine	36	44	62	71
Multi-Engine	11	17	26	33

TABLE 3-23
AVIATION ACTIVITY FORECAST
VISALIA/EXETER/FARMERSVILLE
AVIATION PLANNING ZONE

Item	Forecast			
	1985	1990	1995	2000
Total Operations	239,300	301,000	327,600	494,000
General Aviation	229,300	286,000	307,600	351,400
Itinerant	116,900	151,600	169,200	200,300
Local	112,400	134,400	153,400	151,100
Scheduled Air Carrier[1]	10,000	15,000	20,000	25,000
Enplaned Passengers[1]	25,000	37,000	46,000	66,000
Air Cargo (on-off, lbs)[2]	1,300,000	2,000,000	2,500,000	3,000,000
Total Based Aircraft	312	404	451	534
Single Engine	237	291	316	363
Multi-Engine	75	113	135	171

1 Estimated based on FAA forecasts contained in Terminal Area Forecasts, Fiscal Year 1980-1991, FAA, November, 1979. pg. 457, and Preliminary Forecasts developed for the Visalia Master Plan, August W. Compton & Associates.

2 Visalia Master Plan, Preliminary 1980 data, August W. Compton & Associates.

TABLE 3-24
AVIATION ACTIVITY FORECAST
SOUTHEAST COUNTY/PORTERVILLE/LINDSAY
AVIATION PLANNING ZONE

Item	Forecast			
	1985	1990	1995	2000
Total Operations	126,400	157,800	195,700	225,000
General Aviation	126,400	157,200	195,700	225,000
Itinerant	64,500	83,300	107,600	128,300
Local	61,900	73,900	88,100	96,700
Scheduled Air Carrier	-	-	-	-
Enplaned Passengers	-	-	-	-
Air Cargo (on-off, lbs)	-	-	-	-
Total Based Aircraft	172	222	287	342
Single Engine	131	160	201	233
Multi-Engine	41	62	86	109

TABLE 3-25
AVIATION ACTIVITY FORECAST
SOUTHWEST COUNTY/TULARE
AVIATION PLANNING ZONE

Item	Forecast			
	1985	1990	1995	2000
Total Operations	114,700	143,000	178,700	205,000
General Aviation	114,700	143,000	178,700	205,000
Itinerant	58,500	75,000	98,300	117,000
Local	56,200	67,200	80,400	88,300
Scheduled Air Carrier	-	-	-	-
Enplaned Passengers	-	-	-	-
Air Cargo (on-off, lbs)	-	-	-	-
Total Based Aircraft	156	202	262	312
Single Engine	119	145	183	212
Multi-Engine	37	57	79	100

3.2.5 Airport System Capacity Considerations

The previous sections of this report, dealing with existing and forecasted aviation activity in the County, show that aircraft operations are composed primarily of general aviation activity. Current annual operations at Visalia, Porterville, Tulare and Sequoia are significant in volume. These operations occur in close proximity to one another; however, this condition does not currently present any significant airspace safety problems.

Airport capacity at Visalia and Porterville will become a greater consideration during the planning period, particularly if no airport capacity improvements are made. Increased operations at both of these airports will also affect the operational capacity of the other airports in the County. FAA forecasts indicate that total annual operations at Visalia will exceed desirable operational levels for uncontrolled (no tower) fields by the year 1986.[1] Current total annual operations at Visalia exceed 130,000, of which approximately 4,000 are air carrier operations. This level of activity already exceeds the FAA forecasts cited above and indicates that Visalia will be approaching a capacity situation sooner than anticipated.

The long-range construction program includes plans for the installation of a tower at Visalia. With tower control, annual operational capacity at Visalia would be approximately 195,000 operations, assuming future use by two- and three-engine jet air carrier aircraft. This capacity figure would be slightly higher, approximately 215,000, assuming an aircraft fleet mix with aircraft no larger than the current light commuter air carrier and business jets which operate at Visalia.[2]

Porterville Municipal Airport currently has approximately 80,000 operations annually. Its operational capacity, assuming tower control, would be about the same as that noted earlier for Visalia. However, the installation of a tower at Porterville is considered unlikely, due to the proximity of Visalia and the other major airports described earlier.

As annual operational activity at Visalia approaches capacity levels, it is likely that operations at Sequoia and Tulare will be affected. These effects will be manifested in terms of shifts in operational activity from Visalia to these airports and through potential increases in airspace conflicts in the vicinity. Similarly, the increased activity at Porterville would affect operations at both Tulare and Eckert Field.

---

1 Terminal Area Forecasts, Fiscal Year 1980-1991, November, 1989. Table 12.

2 Airport Capacity Criteria Used in Long-Range Planning, FAA, December 14, 1969. Table 1.

In general, the use of designated airspace in Tulare County will not approach saturation levels during the study period. As noted earlier, certain points within the study area will experience concentrations of traffic as operations increase. However, these concentrations are not expected to reach levels sufficient to seriously constrain operations in the area, assuming normally effective coordination and established traffic control procedures.

Specific points of traffic conflict may occur along the ILS approach to Visalia, which passes near Mefford Field. Another area of potential long-range conflict would be along State Route 99 in the vicinity of Tulare and Visalia. This highway is frequently used by area pilots as a visual location reference.

3.2.6 Advances in Aviation Technology

Over the last few decades, the advances in aviation technology, particularly air carrier and other jet aircraft,have been substantial. These advances are expected to continue during the next 20 years and could affect aircraft operations in Tulare County. Advances are expected in a number of areas including:

1) reduction in noise levels,
2) increased fuel efficiency,
3) improved instrument landing systems, including microwave ILS and automated landing systems,
4) improved weather forecasting,
5) improved inflight services,
6) introduction of STOL/VTOL operations,
7) airborne collision avoidance systems, and
8) increased automation of traffic control functions.

The most significant advances in aviation technology will have major effects on large-scale air carrier and air cargo operations, and are not expected to have significant effects on the short to mid-range system needs of Tulare County. However, over the long-term, safety-related advances and improvements in traffic control systems, together with improved positive control and increased training requirements, could affect the system's operational capacity. It is impossible to adequately quantify such long-range effects, and it will be necessary to evaluate them in future years, as expansion programs become necessary at various airports.

No technological advances are foreseeable at this time that would have a radical effect on the nature of aircraft operations or facility requirements in Tulare County. It is impossible to determine what market decisions air carriers and the government may make in the future which could affect the area. Also, the likelihood of significant new air carrier service in the County cannot be reasonably estimated. However, the potential exists for the reinstitution of jet air carrier aircraft, such as the Boeing 737 that served Visalia until 1979.

Also, the potential of larger aircraft associated with increased agricultural or other air cargo activity, although appearing marginally likely, cannot be discounted altogether. This potential exists at several airports including Visalia, Sequoia, Tulare and Porterville. Advances in containerization and the automation of air cargo handling could affect the economic viability of air cargo operations, thus making them more attractive. Any decision to initiate or expand air cargo operations is highly related to the market for such activity and cannot be forecasted accurately at this time.

CHAPTER 4

4.0 ALTERNATIVE AIRPORT SYSTEMS

Previous chapters of this report have described the existing airport and aviation facilities system in the County and surrounding region, have characterized system-wide capacity and have presented forecasts of future levels of demand upon the system. On the basis of the information and analysis summarized in these preceding chapters, it has been determined that forecasted potential demand may exceed practical airside capacity at the Visalia and Porterville Municipal airports by the end of the planning period (the year 2000), and, more significantly, that potential demand is likely to exceed existing landside facilities capacity on a system-wide basis well in advance of the conclusion of the planning period.

This chapter further characterizes the relationship between current and projected system capacity and forecasted potential demand. This relationship provides a framework within which several elemental issues relevant to the County-wide airport system can be identified and considered. Finally, this chapter introduces, at a conceptual level, a range of airport system development alternatives which might be selected for the Tulare County region and provides a set of criteria by which these alternatives can be evaluated to determine their comparative feasibility and desirability for implementation on a County-wide basis. Upon completion of this evaluation, one of the alternatives, or a combination of the most desirable attributes of several of the alternatives, will be isolated and detailed as the basis of the County's system plan.

4.1 AIRPORT FACILITIES REQUIREMENTS

To further characterize the relationship between the capacity of the County's system of airports and the potential demand on this system anticipated as a result of forecasted levels of future aviation activities in the County, the forecasts discussed in the preceding chapter have been extended and translated into future "facility requirements" for the five aviation planning zones established for this study. The term "facility requirements" as it is used herein refers to the desirable quantity of various airport facility components which may be identified based upon forecasts of aviation demand. The FAA, in Advisory Circulars 150/5300-4B, 150/5060-1A, 150/5060-3A and other related publications, provides guidance in the determination of these facility requirements. The purpose of this section of the report is to review the maximum facility requirements associated with the demand forecasts for each aviation planning zone.

4.1.1 General Aviation

Aside from the runway and taxiway, facilities required to serve general aviation requirements typically include the following major items: terminal and pilot utilization building space; hangars and hangared aircraft parking spaces; apron area and apron aircraft parking spaces; and public vehicle parking. Terminal building requirements for all airports other than Visalia were calculated on a gross basis, using Advisory Circular AC 150/5300-4B and AC 150/5360-9 as a guide. It should be noted that precise facility requirements can only be determined through a more detailed master planning process for specific airports and will vary slightly by airport layout, location and specific prevailing conditions. However, for planning purposes, the following terminal building area coefficients are regarded to be acceptable and were, therefore, used to reflect pilot, visitor and administrative requirements:

1) Basic Utility Stage 1 - 650 Square feet per facility
2) Basic Utility Stage 2 - 900 Square feet per facility
3) General Utility - 900 Square feet per facility
4) Basic Transport - 1,000 Square feet per facility
5) General Transport - 1,200 Square feet per facility

Visalia Municipal Airport Terminal building requirements were based on the City's adopted master plan in effect at the time of this study.

Aircraft parking requirements for both hangared and apron (tie-down) spaces were estimated as follows:

> One space per based aircraft plus 30 percent for itinerant aircraft. This total space allotment was then assigned to hangared apron and spaces based on approximately 3.3 based aircraft per hangar, with the remainder assigned to apron.

The foregoing value roughly corresponds to FAA standards; however, it consistently allows for fewer hangared spaces to reflect an anticipated desire of Tulare County aircraft owners for the more economical tie-down type of aircraft parking space. The current County-wide ratio of based aircraft per hangared space is approximately 2.0. However, for the larger airports, the range is from 1.7 (at Mefford Field) to 3.4 (at Porterville Municipal Airport). The recommended FAA standard of 300 square yards per space contained in AC 150/5300-4B was used to determine total square yard area requirements.

Automobile parking space requirements were determined by assigning the following number of spaces per airport classification:

1) Basic Utility Stage 1 - 20 Spaces
2) Basic Utility Stage 2 - 35 Spaces
3) General Utility - 50 Spaces
4) Basic Transport - as needed
5) General Transport - as needed

For Visalia, Porterville, Tulare and Woodlake airports, the respective adopted master plans in effect at the time of this study were again used as a guide. Each parking space was assigned 350 square feet, which includes space for circulation and maneuvering.

4.1.2 Commuter Air Carrier

Facilities required to serve commuter air carrier needs, identified in the previous chapter as the probable continued means of providing air passenger service to the County for the duration of the planning period, typically include passenger gates; terminal facilities; aircraft apron parking; and public vehicle parking. Visalia Municipal Airport is the only commuter air carrier facility in Tulare County, and the information pertaining to air carrier facility requirements presented in the tables accompanying this section of the report, therefore, apply specifically and only to this airport facility. Where applicable the criteria utilized for general aviation airports as described earlier were also used for Visalia. Otherwise, the City's master plan in effect at the time of this writing and a review of existing facilities and activity have formed the basis for calculating this category of facilities requirements.

4.1.3 Summary of Facilities Requirements by Aviation Planning Zone

Tables 4-1 through 4-6 summarize generalized facilities requirements for each of the five aviation planning zones in the County and for the County as a whole. It is essential that these requirements be understood as representative of the facilities necessary, in accordance with established standards, to serve all of the activity forecasted in the aviation activity forecasts set forth earlier in this report. As such, they should be regarded as a "maximum case" condition for system development over the course of the planning period, presuming that public policy incorporates the objective of satisfying all of the forecasted activity. It should also be noted that "demand", as the term is applied in this report, represents the level of aviation activity for the County assuming an unconstrained capacity of the County-wide airport system to accommodate such activity. When the realization of this demand is artificially constrained by limitations on system capacity, forecasted levels of aviation activity physically could not, and therefore would not, be reached.

4.2 AVIATION ISSUES AND POLICY FRAMEWORK

As a prelude to identifying the primary aviation issues confronting the County, as well as existing aviation policies, it is appropriate to examine historical actions taken in the County concerning development of the local airport system. These actions, to some extent, reflect precedent and attitudes towards aviation which are appropriate to note in the consideration of future airport system development.

4.2.1 Historical Perspective

Historically, both the County of Tulare and several of its incorporated cities have taken actions, adopted policies and evidenced commitments significantly influencing the development of the existing Countywide airport system. The County itself has been directly involved in airport development and operation since 1942, when it supported the development of both the Tulare Air Park (Mefford Field) and the Porterville Municipal Airport. Since that time, the County has provided funds for airport land acquisition and construction, as well as planning, zoning and administrative technical support. The County's continued operation and maintenance of the Sequoia Field and Harmon Field airport facilities reflect the extent of the County's present direct participation in administration of components of the regional airport system.

At the time the 1971 Tulare County Airport Master Plan was developed, several County actions in response to recommendations set forth in that Plan were significant in establishing the present policy framework for airport system planning and development locally. The 1971 Plan recommended that the County discontinue its active participation in regional airport system operation, abandoning airport activities at both Sequoia and Harmon Fields. The Plan also recommended the County dispose of the Three Rivers facility. The County declined, however, to implement these recommendations at that time, although the Three Rivers airport remained technically closed since 1971, and in 1981 was physically, permanently removed from the countywide airport system.

The 1971 Plan additionally recommended that the County, perhaps in conjunction with the State, pursue the development of a fog-free airport facility in the foothills. Since 1971, though, neither the County nor the State has initiated any commitment to the development of such a facility. Finally, the 1971 Plan called for the County to expressly discourage private airport development and to

concentrate facility improvements and, therefore, the capacity to accommodate future County-wide aviation activities, at selected publicly-owned and operated airports. To date, however, implementation of this recommended policy has not been clearly reflected in County-initiated zoning, land use regulation and planning actions.

The recent activities of several of the County's cities have also been noteworthy in establishing a historical perspective and policy framework for the direction of future airport system planning. The cities of Visalia, Tulare and Porterville have all evidenced a strong commitment to the continued maintenance and expansion of local airport facilities in the form of adopted master plans for airport expansion. Projects have been undertaken and completed in accordance with these plans, and there is no evidence to indicate that local support for airport maintenance and development will not continue in these communities.

Privately-owned and operated airport and airfield facilities in the County, as discussed in earlier sections of this report, have historically tended to consist of three general types of facilities: privately-owned general aviation facilities open to the public; agriculturally-oriented fields and airports principally serving aerial applicator fixed base operations; and private landing strips serving individual property owners. The first two types of facilities have exhibited considerable stability, although some turnover in ownership and generally uneven levels of maintenance have been typical on a County-wide basis. The third category of facilities, private landing strips, has been characterized by a pattern of development and abandonment throughout the County, although in general, it can be assumed that the overall number of such strips in operation has gradually increased over the years.

It should be understood that historical trends in the development, maintenance and operation of aviation facilities in the County do not necessarily predetermine the appropriateness, feasibility and/or desirability of any future plans and potential policies regarding the County-wide airport system. In very recent years, there have been changes in both the aviation field in general and in the ability of the County and its cities to economically sustain the area's aviation facilities, necessitating a new look at the future of local airport system development. It is useful, however, to view recent historical trends and actions in this context as reflective of acceptable public and private entrepreneurial policies which will exert influence on the direction taken in local airport system planning.

4.2.2 Aviation Issues

The County is currently confronted with several aviation issues which properly must be addressed during the formulation of a future course of airport system planning and development. Often these issues are somewhat interrelated, in that actions taken toward the resolution of one issue may affect the magnitude or nature of another. For example, if the County were to assume an increasing role in public-sector development and operation of airport facilities, how should it then deal with the role of private airports in its capacity as a regional planning agency and land use regulation enforcement entity? With this type of consideration in mind, the following elemental aviation issues have been identified in this study process, based on input from public agency staff, private airport operators, pilots and the general public. It should be noted that these issues are stated at the most basic and conceptual level. Other more specific aviation-related issues will be identified and examined in light of the airport system alternatives to be described later in this report.

The single, most significant aviation question facing the County at this time may be stated as follows:

> In what manner and to what extent should the public assume responsibility for future airport development to satisfy forecasted facilities demand?

This issue represents the basic question this study addresses and, therefore, must be broken down into several related, but discernible subissues:

> Should forecasted growth in aviation be served through the further development of public airports?
>
> What role should private interests play in airport development and how should the local public agencies interact with these interests?
>
> Should the County actively encourage or discourage any specific future aviation-related activities?
>
> What priority should future airport development have with respect to other transportation programs and planned improvements in the County?

The following discussion of aviation policy, combined with the perspective provided by the historical aviation-related actions earlier, provides an essential analytical framework for identifying the single or several best solutions to these general issues. The solutions may then be represented on a County-wide basis through their translation into system alternatives, each of which represents a different approach to and level of satisfying the issues identified in this document.

4.2.3 Existing Aviation Policy

The 1984 Regional Transportation Plan prepared by TCAG is the policy-setting document for transportation in the County. This Plan contains an adopted Policy Element, agreed upon by each of the governmental members of TCAG. A portion of the Policy Element relates directly to aviation, while other portions relate indirectly but are, nonetheless, important to aviation-related questions.

Rather than restate the entire Policy Element, only significant applicable excerpts and specific policy statements are discussed herein. These excerpts, followed by a brief analysis, are presented below:

The primary development goal is clearly expressed by the statement, "Promote an efficient transportation system for the movement of people and goods which enhances the physical, economic and social environment...". This is followed by an objective concerning streets and highways, which also relates to airport development, "Develop and maintain a road system which is convenient, safe and efficient." A public transportation objective also related to aviation is "Provide a coordinated transit system which can reasonably meet the needs of the citizens of Tulare County."

TABLE 4-1
AIRPORT FACILITIES REQUIREMENTS
NORTHWEST COUNTY/DINUBA

Item	Unit	Quantity
General Aviation		
1. Terminal Building	Sq. Ft.	1,550
2. Aircraft Apron Parking	Sq. Yds.	75,300
A. Hangars	Sq. Yds.	22,800
B. Hangared Spaces	No.	76
C. Apron	Sq. Yds.	52,500
D. Apron Spaces	No.	175
3. Public Vehicle Parking		
A. Parking	Sq. Ft.	24,500
B. Parking Spaces	No.	70
Commuter Air Carrier [1]		
1. Passenger Gates	No.	N.A.
2. Terminal Building [2]	Sq. Ft.	N.A.
3. Aircraft Apron Parking [3]	Sq. Ft.	N.A.
4. Public Vehicle Parking		
A. Parking	Sq. Ft.	N.A.
B. Parking Spaces	No.	N.A.

[1] Visalia Municipal Airport only.

[2] Includes the entire existing terminal building at Visalia Municipal Airport.

[3] Estimated portion designated for commuter air carrier use.

TABLE 4-2
AIRPORT FACILITIES REQUIREMENTS
NORTHEAST COUNTY/WOODLAKE

Item		Unit	Quantity
General Aviation			
1.	Terminal Building	Sq. Ft.	1,550
2.	Aircraft Apron Parking	Sq. Yds.	40,800
	A. Hangars	Sq. Yds.	12,300
	B. Hangared Spaces	No.	41
	C. Apron	Sq. Yds.	28,500
	D. Apron Spaces	No.	95
3.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	19,250
	B. Parking Spaces	No.	55
Commuter Air Carrier [1]			
1.	Passenger Gates	No.	N.A.
2.	Terminal Building [2]	Sq. Ft.	N.A.
3.	Aircraft Apron Parking [3]	Sq. Ft.	N.A.
4.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	N.A.
	B. Parking Spaces	No.	N.A.

[1] Visalia Municipal Airport only.

[2] Includes the entire existing terminal building at Visalia Municipal Airport.

[3] Estimated portion designated for commuter air carrier use.

TABLE 4-3
AIRPORT FACILITIES REQUIREMENTS
VISALIA/EXETER/FARMERSVILLE

Item	Unit	Quantity
General Aviation		
1. Terminal Building	Sq. Ft.	1,650
2. Aircraft Apron Parking	Sq. Yds.	208,200
A. Hangars	Sq. Yds.	63,000
B. Hangared Spaces	No.	210
C. Apron	Sq. Yds.	145,200
D. Apron Spaces	No.	484
3. Public Vehicle Parking		
A. Parking	Sq. Ft.	147,000
B. Parking Spaces	No.	420
Commuter Air Carrier [1]		
1. Passenger Gates	No.	2
2. Terminal Building [2]	Sq. Ft.	32,000
3. Aircraft Apron Parking [3]	Sq. Ft.	4,600
4. Public Vehicle Parking		
A. Parking	Sq. Ft.	-
B. Parking Spaces	No.	-

[1] Visalia Municipal Airport only.

[2] Includes the entire existing terminal building at Visalia Municipal Airport.

[3] Estimated portion designated for commuter air carrier use.

[4] See General Aviation.

TABLE 4-4
AIRPORT FACILITIES REQUIREMENTS
SOUTHEAST COUNTY/PORTERVILLE/LINDSAY

Item	Unit	Quantity
General Aviation		
1. Terminal Building	Sq. Ft.	2,300
2. Aircraft Apron Parking	Sq. Yds.	133,500
A. Hangars	Sq. Yds.	40,500
B. Hangared Spaces	No.	135
C. Apron	Sq. Yds.	93,000
D. Apron Spaces	No.	310
3. Public Vehicle Parking		
A. Parking	Sq. Ft.	66,500
B. Parking Spaces	No.	190
Commuter Air Carrier [1]		
1. Passenger Gates	No.	N.A.
2. Terminal Building [2]	Sq. Ft.	N.A.
3. Aircraft Apron Parking [3]	Sq. Ft.	N.A.
4. Public Vehicle Parking		
A. Parking	Sq. Ft.	N.A.
B. Parking Spaces	No.	N.A.

[1] Visalia Municipal Airport only.

[2] Includes the entire existing terminal building at Visalia Municipal Airport.

[3] Estimated portion designated for commuter air carrier use.

TABLE 4-5
AIRPORT FACILITIES REQUIREMENTS
SOUTHWEST COUNTY/TULARE

Item		Unit	Quantity
General Aviation			
1.	Terminal Building	Sq. Ft.	2,450
2.	Aircraft Apron Parking	Sq. Yds.	121,800
	A. Hangars	Sq. Yds.	37,200
	B. Hangared Spaces	No.	124
	C. Apron	Sq. Yds.	84,600
	D. Apron Spaces	No.	282
3.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	66,500
	B. Parking Spaces	No.	190
Commuter Air Carrier [1]			
1.	Passenger Gates	No.	N.A.
2.	Terminal Building [2]	Sq. Ft.	N.A.
3.	Aircraft Apron Parking [3]	Sq. Ft.	N.A.
4.	Public Vehicle Parking		
	A. Parking	Sq. Ft.	N.A.
	B. Parking Spaces	No.	N.A.

[1] Visalia Municipal Airport only.

[2] Includes the entire existing terminal building at Visalia Municipal Airport.

[3] Estimated portion designated for commuter air carrier use.

TABLE 4-6
AIRPORT FACILITIES REQUIREMENTS
TULARE COUNTY (ALL)

Item	Unit	Quantity
General Aviation		
1. Terminal Building	Sq. Ft.	9,500
2. Aircraft Apron Parking	Sq. Yds.	579,600
A. Hangars	Sq. Yds.	175,800
B. Hangared Spaces	No.	586
C. Apron	Sq. Yds.	403,800
D. Apron Spaces	No.	1,346
3. Public Vehicle Parking		
A. Parking	Sq. Ft.	323,750
B. Parking Spaces	No.	925
Commuter Air Carrier [1]		
1. Passenger Gates	No.	2
2. Terminal Building [2]	Sq. Ft.	32,000
3. Aircraft Apron Parking [3]	Sq. Yds.	4,600
4. Public Vehicle Parking		
A. Parking	Sq. Ft.	N.A.
B. Parking Spaces	No.	N.A.

1 Visalia Municipal Airport only.

2 Includes the entire existing terminal building at Visalia Municipal Airport.

3 Estimated portion designated for commuter air carrier use.

As noted in the Introduction to this report, TCAG, in addition to formally recognizing the issues described earlier, has adopted a set of specific goals, objectives and policies. Several of these statements are worthy of re-emphasis at this point in order to arrive at a proper understanding of the policy framework which currently influences airport development. Selected statements are listed below:

1) "Priority will be given to the maintenance of the existing system."

2) "Safety projects should be given special consideration."

3) "Each jurisdiction in Tulare County will consider energy conservation when developing their respective transportation plans."

4) "TPA supports coordinated transportation planning and programming."

5) "Provide a transportation system which efficiently transports goods."

6) "Maximize the use and efficiency of the existing transportation system by using transportation system management strategies."

When viewed together, these selected policy statements reflect a sensible, balanced, and direct approach toward transportation development. An overall emphasis is clearly placed upon system management and the maximum use of existing transportation resources. Priorities placed upon maintenance of existing transportation resources and implementation of improvements which are service-related and improve the overall transportation system. These policy statements support public involvement in the development of effective transportation facilities and services throughout the County.

The objectives and policies contained in the Regional Transportation Plan which deal specifically with aviation were revised in 1982 to incorporate the goals and objectives of the Aviation Element, adopted by TCAG in 1981. Thus the policy elements of both documents are consistent in most respects.

Since the State of California, through the Department of Aeronautics, has prepared an Airport System Plan (Statewide), and this plan includes all public airports eligible for development funds, it is important to review the policy-related criteria which will be employed in identifying candidate general aviation airports.

These criteria have been set forth as a part of the State Transportation Improvement Program (STIP) process and are intended to serve as the basis for rating public use airports for possible State assistance. As such, these criteria reflect State priorities concerning airport development and, therefore, should be considered in the identification and evaluation of airport system alternatives for Tulare County.

Six criteria are utilized by the Department of Aeronautics in evaluating public requests for airport assistance. These criteria are described below in the order of the weight or priority they receive in the airport evaluation process.

1) Airport Activity

This criteria relates the relative importance of a general aviation airport to the use it receives. The number of existing based aircraft was chosen as the most reliable indicator of this activity and is considered consistent with the Department's policy of meeting current needs first.

2) Growth Rate

The future rate of airport growth is considered under this criteria by assessing the projected average annual change in the number of based aircraft between 1978 and 1985. The CASP forecasts of aviation activity are used as a basis for this evaluation.

3) Economic Value

The economic value of an airport is considered in terms of both the direct and indirect economic and business value of the airport to the community it serves. The rating is divided equally between income to the community and business utilization.

4) Population Dependence

This criteria measures the relative reliance of the people living in an area on aviation. The ratio of County population to the number of based aircraft currently in the County is considered a measure of this reliance.

5) General Aviation

General aviation airports that serve a "reliever" function are to be encouraged since they increase capacity without requiring the development of new airports. The Department defines a general aviation reliever airport as one that is presently being used, or has the potential for being used, to conduct operations or base aircraft displaced from another airport within a reasonable flying distance that is considered congested and in need of relief.

6) Access to Remote Areas

This criteria has been set forth in recognition of the value of air transportation to those communities remotely situated from population centers and where limited transportation facilities are available. The Department defines a remote area airport as one that is located in an area that, because of geographical features, has limited ground transportation facilities, is located an excessive distance from another airport or population center in terms of ground access time, and is subject to natural disasters (floods, unusually heavy snowfall, storms, etc.).

In general, the State's airport policy gives highest priority to improvements and facilities which resolve current aviation problems and do not provide excessive capacity. Safety, service of the public needs, protection of the environment, maintenance and maximum use of existing facilities, and consistency with adopted plans are also considered important criteria. Generally, the State's

priorities correspond to those of the County and serve to define a useful policy framework for airport system analysis.

4.3 ALTERNATIVES

The following section of this chapter introduces, for the first time, the general alternatives available to the County to address the operation, maintenance and development needs of the County-wide airport system. It is appropriate to reemphasize at this point that this Plan, and the alternatives and recommendations set forth herein, are applicable to the County's airports and aviation facilities on a system-wide basis. Issues and considerations associated with specific individual facilities in the County are not directly addressed herein, but rather, are in some instances the subject of those specific facilities' master plans or are appropriately left to the discretion of private facilities' owners and operators.

The range of system development alternatives presented in this section, each representing a potential course of action, has been identified based on the airport inventory, demand forecasts, issues and policies described previously in this report. The purpose of this exercise in reviewing the system alternatives at the conceptual level is to briefly evaluate the advantages and disadvantages of several basic approaches to County-wide airport development. However, before this evaluation is possible, it is necessary to review the basis from which the airport system alternatives have been identified.

The FAA has developed a classification system which categorizes airports for purposes of design. The classification assigned to a specific airport is based on the classified role of the facility in serving the aviation activity of an area. Several of the existing airports in Tulare County have been assigned an airport classification by either the FAA, as described in the National Airport System Plan, or for smaller airports, by the California Department of Aeronautics, in the California Airport System Plan.

The airport system alternatives discussed in this report are reliant upon the designation of airport classifications using the FAA system described below.

1) Basic Utility - Stage 1. This type of airport can accommodate about 75 percent of the propeller airplanes under 12,500 pounds. It is primarily intended to serve low-activity locations, small population communities, and remote recreational areas. Usually,Stage 1 is only the first step toward development of a Stage 2 Basic Utility Airport.

2) Basic Utility - Stage 2. This type of airport can accommodate about 95 percent of the propeller airplanes under 12,500 pounds. It is primarily intended to serve medium-size population communities, with diversity of usage and potential for increased aviation activities.

3) General Utility. This type of airport can accommodate all propeller airplanes of less than 12,500 pounds. It is primarily intended to serve communities located on the fringe of a metropolitan area or a relatively large population community remote from a metropolitan area. In either case, there should be a substantial usage or potential usage by airplanes having a gross weight of 8,000 pounds.

4) Basic Transport. This type of airport can accommodate turbojet-powered aircraft up to 60,000 pounds gross weight used in general aviation.

5) General Transport. A general transport airport can accommodate transport category airplanes up to 175,000 pounds gross weight used in general aviation.

6) Air Carrier. An air carrier airport can accommodate all types of aircraft. In particular, it handles federally certificated airlines on a regular basis.

The opportunities and constraints which are imposed on airport development by the various aviation activity, issue and policy factors described earlier combine to set parameters for future aviation actions. It is apparent that any system alternative calling for no public agency involvement in aviation is both unrealistic and inappropriate, given the increased aviation activity expected in the County over the next 20 years. Also, it is obvious that a "high-build" or capital-intensive public airport system development scenario is equally unrealistic, given the existence of several good airport facilities in the County already and the County's stated policy of integrated, comprehensive transportation system management. Therefore, an array of realistic options concerning public airport development falls within a still broad, but very finite, identifiable range.

The three basic system alternatives to be discussed represent "low", "medium" and "high" aviation activity orientation given the constraints already described. In the paragraphs that follow, a brief profile of each alternative is presented, summarizing the primary characteristics of each within the context of the issues, policies and consequences plus parameters described earlier.

4.3.1. Alternative 1 - Maintenance of Existing System

This alternative represents a continuation of the current level of aviation support provided by the County and other local governments. It is a "no-change" approach in which the County maintains its funding, development and technical assistance. Five existing public airports would be maintained including the two County owned airports, Sequoia and Harmon Field. However, only basic maintenance and minor improvements in these facilities would be undertaken. Private airport development and operation would be neither encouraged nor discouraged by any overt public policies, allowing economic and entrepeneurial considerations to control this section of the County-wide system. The five public airports identified for continued operation and maintenance at current levels under this alternative are listed below:

1) Visalia Municipal Airport
2) Mefford Field
3) Porterville Municipal Airport
4) Sequoia Field
5) Harmon Field

Table 4-7 presents the existing (1981) and future airport facility assumptions associated with Alternative 1 for each of the 10 major public-use airports in the County identified earlier in this report. Each publicly-owned airport would remain at its current classification, despite the substantial increases in forecasted aviation demand discussed in the preceding chapter of this report. Since

future decisions governing privately-owned airport facility construction and related improvements are made by private individuals and cannot easily be anticipated, airport facility classifications for these facilities through the year 2000 have been held constant at their current levels.

Alternative 1 would produce an airport system plan for the County providing one General Transport airport (Visalia), one General Utility airport (Porterville) and eight Basic Utility Stage 1 airports. Under this alternative,however, since the development of public airports would be restrained, resulting in substantial forecasted demand for aviation facilities going unserved by the public sector, the County's private airports could conceivably expand in an effort to capture additional based aircraft and related revenues.

4.3.2 Alternative 2 - System Consolidation and Improvement

Under this scenario, the County would assume a lead in the consolidation of existing aviation facilities, services, and overall administration and development of the airport systems. This alternative represents a "system consolidation" option, with emphasis placed on the reinforcement of an integrated airport system in the County. At the County level, Sequoia Field would be assigned a higher value as a general public interest facility and would be upgraded. The lease agreement between the County and one or more concessionaires at Harmon Field would be revised to provide increased financial assurance that this facility could be retained in its present status as a publicly-owned airport. The County additionally would work actively with the cities of Visalia, Porterville, Tulare, and Woodlake to facilitate the development of a public facilities system potentially capable of satisfying a significant share of forecasted demand. Improvements in existing public airports within the designated system would be encouraged, and such projects would compete with other transportation programs for available funds.

Four existing public airports would be targeted under this alternative for continued and increased development:

1) Visalia Municipal Airport
2) Mefford Field
3) Porterville Municipal Airport
4) Sequoia Field

The Woodlake Airport, because it is under private, rather than public ownership, is not presently eligible for public funding assistance. This facility cannot, therefore, be incorporated into the public funding and development strategies anticipated by this alternative. At the same time, however, the airport is regarded to be a significant component of the overall countywide airport system, especially in light of the closing of the Three Rivers and Synanon airports. Cooperation among the facility's owner, the City of Woodlake and the County to preserve, maintain, and upgrade the facility, and to coordinate facility planning and related impro

t is assumed under this alternative that a substantial portion of the forecasted demand discussed in this report would still go unmet by public airport facilities in the County, although this alternative would result in greater demand satisfaction by the public sector than would be accomplished under Alternative 1, maintenance of the existing public airport system at present levels.

Under both alternatives, in recognition of a policy that public facilities will not fully satisfy forecasted potential demand County-wide, it is suggested the County will wish to support initiatives by the private sector to meet remaining unfulfilled potential demand at non-public airport facilities.

Table 4-8 includes changes in the airport facility assumptions described earlier in Alternative 1 to reflect the consolidation of airport development proposed in Alternative 2. Each of the four public airports noted above would be either upgraded in classification and/or improved as follows:

1) Visalia Municipal Airport - Improve as recommended in the City's adopted Master Plan.

2) Mefford Field - Upgrade from a Basic Utility Stage 1 facility to a General Utility airport as recommended in the City's adopted Master Plan.

3) Porterville Municipal Airport - Upgrade from a General Utility to a Basic Transport airport. This would represent a departure from the airport's adopted Master Plan which calls for the ultimate development of the airport to remain at the General Utility level.

4) Sequoia Field - Upgrade from a Basic Utility Stage 1 to a Basic Utility Stage 2 airport.

In addition, the privately-owned Woodlake facility would be acquired for public ownership and/or operation under this alternative. The facility would appropriately be upgraded from its present Basic Utility Stage 1 status to a Basic Utility Stage 2 level, which is consistent with the existing master plan for the facility.

4.3.3 Alternative 3 - System Expansion and Development

This alternative is a more capital-intensive or "high build" option, wherein additional airport development and expansion is identified as a distinct high public priority in Tulare County. Efforts would be made to develop existing public airport facilities to their fullest extent, emphasizing the servicing through public facilities of as much of the forecasted aviation demand for the County as possible. In general, the County would assume a much more active and growth-oriented posture with regard to the administration and development of public airports. This alternative would include the public operation of a minimum of seven airports:

1) Visalia Municipal Airport
2) Mefford Field
3) Porterville Municipal Airport
4) Sequoia Field
5) Woodlake Airport
6) Harmon Field
7) A Fog-Free Airport

Changes in airport ownership, reflecting public acquisition of several facilities, would be necessary under this alternative. The airport facility assumptions for Alternative 3 are shown in Table 4-9.

Under Alternative 3, several public airports would be substantially upgraded, in keeping with the high development orientation of this option. These changes are summarized below, by affected airport:

1) Visalia Municipal Airport - Improve as recommended in the adopted Master Plan.

2) Mefford Field - Upgrade from a Basic Utility Stage 1 facility to a General Utility airport as recommended in the adopted Master Plan.

3) Porterville Municipal Airport - Upgrade from a General Utility to a Basic Transport airport. This would represent a departure from the airport's adopted Master Plan, which calls for the ultimate development of the airport to remain at the General Utility level.

4) Sequoia Field - Upgrade from a Basic Utility Stage 1 to a General Utility airport.

5) Harmon Field - Upgrade from a Basic Utility Stage 1 to a Basic Utility Stage 2 facility.

6) Woodlake Airport - Upgrade from a Basic Utility Stage 1 to a Basic Utility Stage 2 facility. This airport would be acquired for public ownership and operation under this alternative.

7) Fog-Free Airport - A fog-free facility would be acquired for public ownership and operation and maintained as a Basic Utility Stage 1, fog-free airport for public use.

4.4 EVALUATION OF ALTERNATIVES

Five general evaluative criteria have been identified to provide an analytical framework for the comparison of the proposed airport system alternatives. These criteria are described below in terms of the measures and considerations each represents, along with a range of points assignable to each, to enable quantitative judgments to be formed on a comparative basis regarding each of the alternatives.

1) Development Costs (0-30). This criterion measures the order-of-magnitude capital costs associated with the physical improvements required by each alternative. Facilities such as new airports and apron and terminal improvements were considered on a gross requirement basis. Detailed cost estimates are beyond the scope of this analysis and inappropriate at the system planning level.

2) Service to Projected Demand (0-20). Two primary considerations are represented by this criterion. The first is the proximity of existing and planned airport facilities to projected pilot residence locations in the County. The second relates to the quality of ground access to the various airports. The availability of improved roadway facilities, including connections to adjacent highways, was considered.

TABLE 4-7
ALTERNATIVE 1 AIRPORT FACILITY ASSUMPTIONS

	NASP Airport Designation[1]		Ownership/Use[2]		Facility Classification[3]	
	1981	1990	1981	2000	1981	2000
1) Northwest County/Dinuba						
Alta Airport	N.A.	N.A.	PRI/PRI	PRI/PRI	BU1	BU1
Sequoia Field	BU	GU	PUB/PUB	PUB/PUB	BU1	BU1
2) Northeast County/Woodlake						
Woodlake Airport	GA	GA	PRI/PUB	PRI/PUB	BU1	BU1
3) Visalia/Exeter/Farmersville						
Visalia Municipal Airport	AC	AC	PUB/PUB	PUB/PUB	GT	GT
Green Acres Airport	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
4) Southeast County/ Porterville/Lindsay						
Porterville Municipal Airport	GA	GA	PUB/PUB	PUB/PUB	GU	GU
Eckert Field	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
Pruner Airport	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
5) Southwest County/Tulare						
Mefford Field	BU	GU	PUB/PUB	PUB/PUB	BU1	BU1
Harmon Field	N.A.	N.A.	PUB/PUB	PUB/PUB	BU1	BU1

1 See Appendix A for FAA Facility Classifications used in this analysis. No year 2000 data is available for comparison purpose.

2 PRI = Private; PUB = Public

3 BUI = Basic Utility Stage 1; BU2 = Basic Utility Stage 2; GU = General Utility; BT = Basic Transport; GT = General Transport

TABLE 4-8
ALTERNATIVE 2 AIRPORT FACILITY ASSUMPTIONS

	NASP Airport Designation[1]		Ownership/Use[2]		Facility Classification[3]	
	1981	1990	1981	2000	1981	2000
1) Northwest County/Dinuba						
Alta Airport	N.A.	N.A.	PRI/PRI	PRI/PRI	BU1	BU1
Sequoia Field	BU	GU	PUB/PUB	PUB/PUB	BU1	BU2
2) Northeast County/Woodlake						
Woodlake Airport	GA	GA	PRI/PUB	PUB/PUB	BU1	BU2
3) Visalia/Exeter/Farmersville						
Visalia Municipal Airport	AC	AC	PUB/PUB	PUB/PUB	GT	GT
Green Acres Airport	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
4) Southeast County/ Porterville/Lindsay						
Porterville Municipal Airport	GA	GA	PUB/PUB	PUB/PUB	GU	BT
Eckert Field	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
Pruner Airport	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
5) Southwest County/Tulare						
Mefford Field	BU	GU	PUB/PUB	PUB/PUB	BU1	GU
Harmon Field	N.A.	N.A.	PUB/PUB	PUB/PUB	BU1	BU1

[1] See Appendix A for FAA Facility Classifications used in this analysis.

[2] PRI = Private; PUB = Public

[3] BUI = Basic Utility Stage 1; BU2 = Basic Utility Stage 2; GU = General Utility; BT = Basic Transport; GT = General Transport

TABLE 4-9
ALTERNATIVE 3 AIRPORT FACILITY ASSUMPTIONS

	NASP Airport Designation[1]		Ownership/Use[2]		Facility Classification[3]	
	1981	1990	1981	2000	1981	2000
1) Northwest County/Dinuba						
Alta Airport	N.A.	N.A.	PRI/PRI	PRI/PRI	BU1	BU1
Sequoia Field	BU	GU	PUB/PUB	PUB/PUB	BU1	GU
2) Northeast County/Woodlake						
Fog-Free Airport	N.A.	N.A.	PRI/PRI	PUB/PUB	BU1	BU1
Woodlake Airport	GA	GA	PRI/PUB	PUB/PUB	BU1	BU2
3) Visalia/Exeter/Farmersville						
Visalia Municipal Airport	AC	AC	PUB/PUB	PUB/PUB	GT	GT
Green Acres Airport	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
4) Southeast County/ Porterville/Lindsay						
Porterville Municipal Airport	GA	GA	PUB/PUB	PUB/PUB	GU	BT
Eckert Field	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
Pruner Airport	N.A.	N.A.	PRI/PUB	PRI/PUB	BU1	BU1
5) Southwest County/Tulare						
Mefford Field	BU	GU	PUB/PUB	PUB/PUB	BU1	GU
Harmon Field	N.A.	N.A.	PUB/PUB	PUB/PUB	BU1	BU2

1 See Appendix A for FAA Facility Classifications used in this analysis.

2 PRI = Private; PUB = Public

3 BUI = Basic Utility Stage 1; BU2 = Basic Utility Stage 2; GU = General Utility; BT = Basic Transport; GT = General Transport

3) Existing Resource Utilization (0-20). This criterion measures the degree to which the existing airport resources of the County are utilized to their fullest potential. Upgrading existing airports and improvements in their operational efficiency are assigned positive value under this measure.

4) Compatibility with State and Local Plans (0-10). The consistency of each system alternative with the general provisions, goals and objectives of both State and local adopted aviation, land use and general plans is measured by this criterion. The degree to which an alternative supports these provisions is a significant consideration.

5) Community Acceptance (0-10). A qualitative assessment of the degree of public acceptance anticipated for each alternative is translated into proportionate quantitative values in this criterion.

6) Economic Value (0-10). This criterion measures the contribution each alternative would make toward supporting the economic base and activity of the County and individual communities. The amount of direct and indirect income an airport generates and its utili- zation by an associated community is considered in this analysis.

The maximum, or most desirable score any of the alternatives could receive would be 100 points, and the lowest, or least desirable, would be zero. However, it is apparent from the criteria and the alternatives described earlier that each alternative has some merit and, therefore, the scores attained by each are likely to fall toward the mid-range of the scale provided.

It should be specifically noted that the evaluation presented herein does not include a distinct criterion relating to environmental considerations. General environmental considerations were included in criterion 4, Compatibility with State and Local Plans. More specific environmental analysis will be presented for the recommended Plan, to be described in the next section of this report. In this manner, the environmental implications of the airports recommended for inclusion in the final Plan may be discussed in a meaningful fashion.

Table 4-10 presents the Airport System Evaluation Matrix which summarizes the findings of this analysis through the assignment of numerical values representing ratings for each alternative. This rating process reflects a bias based on the aviation data, conditions and policies described in the previous sections of this report. Following is a narrative evaluation of each alternative, based on the criteria imposed herein. This narrative summarizes the rationale behind the numerical ratings presented in Table 4-10.

4.4.1 Development Costs

Alternative 1 is the least expensive system alternative in terms of cost of development. In fact, this alternative calls for essentially no major capital improvements and thus receives the highest rating among the alternatives under this criteria. Alternative 2 rates slightly lower,since it requires a moderate level of airport development. However, this development would take place at selected existing airports and, therefore, would not require extensive capital investment at numerous facilities or the development of any new airports.

TABLE 4-10
AIRPORT SYSTEM EVALUATION MATRIX
TULARE COUNTY

	Criterion	Weighted Range[1]	Airport System Alternative[2] 1	2	3
1)	Development Cost	0-30	25	15	10
2)	Service to Projected Demand	0-20	5	10	15
3)	Existing Resource Utilization	0-20	5	15	15
4)	Compatibility with State and Local Plans	0-10	7	10	3
5)	Community Acceptance	0-10	3	5	3
6)	Economic Value	0-10	5	8	10
	TOTAL		50	63	56

[1] A higher rating represents a more desirable condition with 100 serving as the maximum and 0 as the minimum.

[2] Alternative 1 = Maintenance; Alternative 2 = Consolidation and Improvement; Alternative 3 = Expansion and Development.

Alternative 3 represents the most capital-intensive of the three system alternatives in that it reflects a substantial upgrading and greatly expanded development of airports in the County. Thus, this alternative was assigned the lowest or least desirable rating of the three alternatives. Since Alternatives 2 and 3 both require a certain level of airport development, the ratings for each (15 and 10, respectively) are closer together than Alternative 1 and Alternative 2 (25 and 15, respectively).

4.4.2 Service to Projected Demand

Although Alternative 1 includes more public use airports than Alternative 2, it does not allow for required physical improvements to accommodate forecasted increased demand. Alternative 2 consolidates airport activity into a more efficient and manageable number of facilities, and in doing so, allows for the upgrading of designated airports. This consolidation and improvement of airport facilities will provide a higher quality of aviation service than Alternative 1 in a slightly less convenient manner. Under Alternative 2, airport users would be required to travel further, but to a higher quality airport facility.

Alternative 3 combines the best of both Alternatives 1 and 2 in that it includes a number of airports, conveniently located, throughout the County and calls for improvement of these facilities to better serve increased aviation demand. This alternative was assigned a rating of 15 which is 5 higher than the value assigned to Alternative 2 and reflects the higher capacity offered under this option. All forecasted aviation demand would be served in Alternative 3,unlike the other options, which would meet only a portion of this demand.

4.4.3 Existing Resource Utilization

The Consolidation and Improvement and Expansion and Development Alternatives (2 and 3) utilize the existing airport resources of the County to a greater extent than Alternative 1, Maintenance. Alternative 3 calls for the maximum utilization of all existing facilities, while Alternative 2 stipulates a consolidation of airport resources and a concentration of utilization in a more efficient manner. Therefore, both alternatives were assigned the same rating.

Alternative 1 does not allow for the improved utilization of existing airport facilities. Instead, it merely provides for the continued use of existing airports, but with no physical improvements to accommodate increased demand. As such, this alternative falls short of the other two in the maximum utilization of existing resource potential.

4.4.4 Compatibility with State and Local Plans

A previous section of this report, entitled "Aviation Policy", delineated the guidelines set forth by the State of California and Tulare County concerning airport development. As noted earlier, a primary policy guideline set forth by the State and County is aviation system management, or in other words, encouragement of actions and improvements to maximize the utilization and management of aviation resources. Clearly, Alternative 2 represents the best approach to airport development, given this criteria. In fact, this alternative is purposely designed around the system management concept.

Alternative 1 rates lower than Alternative 2 because it does not call for specific improvements in system management. Alternative 3, which represents significant expansion and development of airport facilities, is capital-intensive and would be more costly than either of the other two alternatives. In effect, it allows for the type of expensive development that the system management concept is intended to minimize through more intense management and cost-effective minor improvements. Accordingly, Alternative 3 was assigned the lowest rating for compatibility with State and local plans.

4.4.5 Community Acceptance

Through the course of the study process, and after a review of historical aviation actions taken by the County and municipalities of the region, it has become apparent that some sort of affirmative action concerning the protection and proper management of aviation resources is a public desire. A no-action or do-nothing approach would appear to harbor little public acceptance, particularly in view of the substantial growth forecast in aviation demand. Similarly, a high-level or capital-intensive approach to airport development, with the objective of serving all of the anticipated aviation demand during the planning period (through the year 2000), is undesirable from a community acceptance standpoint because of costs. Competing demands for available transportation improvement funds from federal, State, and local sources effectively discourages such

an approach and makes it less acceptable, given today's general climate of fiscal restraint. Therefore, Alternatives 1 and 3 were assigned comparatively low ratings under the Community Acceptance criteria.

Alternative 2, which provides for controlled airport development in the face of increased aviation demand,and which calls for consolidation of resources and more acceptable levels of public expenditure, is considered the most desirable of the three alternatives from a community acceptance standpoint. This alternative was assigned a rating of five as compared to three for both of the other alternatives.

In view of the current fiscal posture of State and local government and the general conservative trend toward public resource commitment, none of the alternatives was assigned the maximum rating of 10 for this criteria. The lower ratings also reflect the numerous interests which prevail in the County in addition to aviation. These interests will continue to compete with one another for a share of available public funds for construction and public program development.

4.4.6 Economic Value

Each of the three alternatives would present some economic value to the County and the individual municipalities served. However, Alternative 1, with its low level of airport development, would have less beneficial impact on the economy of the area than either Alternative 2 or 3. Both of these alternatives call for capital improvements at area airports which could translate into incentives for local aviation related business activity. Improved facilities will be more attractive to local businesses and supportive of economic growth. Also, better airports will be one of several important considerations for new businesses evaluating the possibility of establishing or expanding operations in Tulare County.

Adequate airport facilities are also an important consideration for a small, but sometimes significant, group of County residents, as well as private individuals who are considering relocating to the County, who are active in business and recreational general aviation. In general, it is well-accepted that adequate and effective transportation facilities and services are important to the economy of any modern community. Thus Alternative 2, with its moderate level of airport development, was assigned a rating of eight, while Alternative 3 was rated at 10.

4.5 RECOMMENDED ALTERNATIVE

The three system alternatives examined herein represent a range of potential airport development scenarios useful in the formulation of a generalized approach to accommodating future aviation demand in Tulare County. Underlying each conceptual alternative, however, is yet another range of more specific operating strategies which will determine to some degree the effectiveness of any given alternative. Upon selection of a desired conceptual approach, this underlying range of available strategies or implementation methods must be carefully analyzed and employed to ensure the most positive and efficient realization of airport system development. Thus, the recommended alternative identified herein represents the first step in the delineation of an airport system plan and serves only as a guide to the formation of that plan. In the next section of this report, the recommended alternative will undergo a refinement process taking into consideration the range of operating strategies noted above.

Alternative 2 was rated best among the alternatives, with a score of 63, as opposed to 50 for Alternative 1 and 56 for Alternative 3. Based on this evaluation and the considerations brought forth herein, Alternative 2 has been forwarded for refinement as the basis for the final Airport System Plan. This refinement will be discussed in the following section concerning the recommended Plan.

CHAPTER 5

5.0 RECOMMENDED PLAN

This chapter outlines the recommended Airport System Plan for Tulare County, and represents a practical application of the system consolidation and improvement conceptual alternative (Alternative 2) presented in the preceding chapter. Included in this discussion are: (1) a description of the appropriate airport system to be developed and maintained County-wide; (2) an enumeration of aviation-related policies to be adopted and implemented; (3) a review of significant environmental considerations relevant to the recommended Plan; and (4) statements concerning the consistency and conformance of the recommended Plan relative to the plans and policies currently in effect in the County and recommendations, where required, as to how conflicts between existing policies and those set forth in the Plan could be reconciled. The following, final chapter of this report outlines the recommended Plan implementation program, detailing those steps necessary to ensure that the Plan is carried out in an effective manner consistent with the policies and guidelines set forth herein.

5.1 AIRPORT SYSTEM DESCRIPTION

The recommended airport system for Tulare County, in conformance with the concept of system consolidation and improvement framed in Chapter 4.0, consists of three general categories of airport facilities: publicly-owned and operated airports; privately-owned public-use general aviation airports; and privately-owned "special use" airport facilities. Special-use airports are generally smaller facilities and include airports used by aerial applicators and strips serving individual rural residences and/or agricultural operations. In addressing these three broad types of airport facilities, the recommended Airport System Plan anticipates a concentration of public-funded airport development and operation at five airports, one in each of the aviation planning zones established earlier in this report, and a County policy of taking all reasonable steps to accommodate private airport development and operation, so long as the long-term viability of priority public facilities is not threatened as a result. Significantly, this Plan takes cognizance of the probable inability of the public sector in Tulare County to fully satisfy forecasted levels of aviation demand because of increasing fiscal constraints on the development and maintenance of public airport facilities. At the same time, however, the Plan provides for some limited expansion of selected existing public facilities in the face of significant increases in aviation demand, acknowledging that private sector facility development and operation has a role in the preservation of the County-wide airport system but can be expected to service only a portion of total demand.

It is important to note that the responsibility for Plan implementation rests with several public agencies in addition to the County of Tulare. The cities of Visalia, Tulare, Porterville and Woodlake are presumed to be full partners in the Plan implementation process, with each of these jurisdictions retaining independent authority over decisions regarding the expansion and improvement of their municipal airport facilities as recommended herein. The Tulare County Association of Governments (TCAG) also exercises a significant responsibility for Plan implementation to the extent that prioritization and coordination of State and federal funding assistance for local public airport development and improvement projects is a function of that body in fulfillment of its responsibilities as the Regional Transportation Planning Agency. Finally, the County's own role in Plan implementation is comprised of two aspects: (1) the County's position as the owner and operator of several existing airport facilities;

and (2) the responsibilities of the County as the regulating agency for land use for the areas in which the preponderant majority of local private airport facilities are situated.

The following paragraphs set forth the basic components of the recommended County-wide Airport System Plan.

5.1.1 Publicly-Owned and Operated Airports

Presently, there are five publicly-owned and/or operated airport facilities in Tulare County; the municipal airports in Visalia, Tulare, and Porterville and the County-owned Sequoia and Harmon Fields. Reflecting the fact that existing public airport facilities in the County are generally the most substantially developed, and based on the presumption that the public sector should be the principal, though not sole provider of aviation facilities countywide, the "public" airport component of this Plan is designed to ensure the continued, long-term availability of adequate airport facilities throughout the County by concentrating public expenditures and development efforts on a reduced number, or "core", of public airports distributed among the five zones described earlier. Specifically, under this Plan, Visalia, Tulare, Porterville and Woodlake airports would be retained as public use facilities and would continue to expand, generally in response to forecasted increases in aviation demand. Sequoia Field would be retained by the County for long-term operation on the same basis. The County would, however, initiate revised lease agreements with one or more private concessionaires at Harmon Field to provide greater private participation in the operation and maintenance of this facility.

The public airport component of the Plan provides for Aviation Planning Zone No. 1, the Northwest/Dinuba portion of the County, to be served ultimately by an expanded public airport facility at Sequoia Field. Retention and further development of Sequoia as a public airport facility is warranted on the basis of several factors. First, although the privately-owned and operated Alta Airport facility currently satisfies a significant level of aviation demand associated with this portion of the County, there are no assurances upon which public policy can be suitably based that Alta will remain in operation during the foreseeable future as a general aviation airport open to public use. Substantial curtailment or closure of Alta would leave only Sequoia Field available to conveniently serve public aviation demand in the northwest County area. Second, as aviation demand continues to increase at Visalia Municipal Airport, to the south, there will be a growing desire for a "reliever" airport to this facility.

TABLE 5-1

RECOMMENDED PLAN

PUBLIC AIRPORTS

Aviation Planning Zone and Airport Designation	Facility Classification 1981	Facility Classification 2000
1) Northwest County/Dinuba		
Sequoia Field	BU1[2]	BU2
2) Northeast County/Woodlake		
Woodlake Airport	BU1	BU2
3) Visalia/Exeter/Farmersville		
Visalia Municipal Airport	GT	GT
4) Southeast County/Porterville/Lindsay		
Porterville Municipal Airport	GU	BT
5) Southwest County/Tulare		
Mefford Field	BU1	GU
Harmon Field	BU1	BU1

1 See Appendix A for FAA Facility Classifications used in this table.

2 BU1 = Basic Utility Stage 1; BU2 = Basic Utility Stage 2; GU = General Utility; BT = Basic Transport; GT = General Transport

The Mefford Field facility could logically provide a portion of this reliever capacity; Sequoia Field could also function significantly in this capacity, however, and would be a logical designation as the reliever to Visalia. Finally, the foregoing factors, combined with (1) the existing value of the facility as a public asset, (2) the logic of providing a "public" airport facility to this portion of the County in response to forecasted demand, just as public airports are also provided to the other four planning zones, and (3) the benefits accruing to the local economy associated with the activities of the fixed base operators located at the field, all suggest the desirability of retaining and, on a limited basis, expanding Sequoia Field as a public interest airport. As reflected in Table 5-1, based on demand forecasts through the year 2000, it is anticipated that Sequoia Field should be improved from a Basic Utility, Stage 1 facility to Basic Utility, Stage 2 status by the end of the planning period.

Aviation Planning Zone No. 2, the Woodlake/northeast portion of the County, would continue to be served by the Woodlake Airport under the "public" component of this plan. As noted previously in this report, the Woodlake facility is currently owned by private interests; however, in order to ensure the continued operation and maintenance of the facility for public use, it is recommended that this airport be targeted for public ownership and/or operation by the end of the planning period. As reflected in the preceding table, on the basis of forecasted aviation demand for Planning Zone No. 2, it is anticipated that the Woodlake Airport should be improved from a Basic Utility, Stage 1 facility to a Basic Utility, Stage 2 airport by the end of the planning period. This level of upgrading would be consistent with the adopted master plan for the airport.

Aviation Planning Zone No. 3, the Visalia/Exeter/Farmersville population center, is the most heavily populated among the five planning zones and is served under the public component of this plan by the largest airport facility in the County, Visalia Municipal. In response to forecasted increases in demand, this facility would be expanded in accordance with the City's adopted master plan. Visalia would continue to be the only location County-wide providing air carrier service, and this airport would generally remain the predominant facility in the County-wide airport system.

The Porterville/Lindsay, or southeastern, portion of the County, Aviation Planning Zone No. 4, would be served primarily by the Porterville Municipal Airport under the public component of the Plan. Based on forecasted demand, this facility would appropriately be upgraded from a General Utility airport to Basic Transport status by the end of the planning period. This expansion would be greater than the General Utility level called for by the City's adopted airport master plan, which guides the development of the airport through approximately 1992. No commuter air carrier service would be provided at the airport since the demand estimate described in Chapter 3.0 would justify only one air carrier airport in the County at Visalia. This disparity is not regarded to be problematic, however. It should be recognized that forecasted demand for this facility is higher now than at the time (1973) the City's master plan was prepared. Moreover, the planning period for this system plan extends beyond that for the facility master plan, to the year 2000.

Aviation Planning Zone No. 5, the southwest County area, including the City of Tulare, would be served principally by Mefford Field under the public component of this Plan. It should be noted, however, that aviation demand in the extreme southerly portion of this planning zone is more likely to be serviced by the

Delano Airport facility, located just across the Kern County line, much as demand in the extreme northern portion of the County is likely to be at least partially satisfied by the Reedley Airport facility located nearby in Fresno County. It is anticipated in this Plan, based on forecasted demand for this zone, that Mefford Field should be upgraded from a Basic Utility, Stage 1 level to a General Utility facility, as recommended in the City's master plan for the airport. Intensive development of an agribusiness center adjacent to the airport is planned by the City of Tulare, and the importance of this facility as a public interest airport would clearly be underscored by increases in agribusiness-related aviation activity to the extent such development occurs.

The second public airport which currently exists in this planning zone, the County-owned and maintained Harmon Field near Pixley, is not incorporated into the public component of this Plan. Harmon serves principally as the base of operations for an aerial applicator, and has only limited utility as a public general aviation facility. Accordingly, under this Plan, Harmon Field is not considered a priority public interest airport, and it is not recommended for retention in the public component of the County-wide airport system. There is, however, substantial local community interest in Harmon Field, with members of the Pixley community having expressed a strong desire for continued County ownership of this facility. Accordingly, it is recommended that the County explore the feasibility of a long-term lease of Harmon Field to one or more private concessionaires. Such a lease arrangement could simultaneously provide greater opportunity for private development and improvement of the field, relieve the County of some liability and maintenance responsibilities for the facility, and improve both the County's and concessionaires' financial position with respect thereto. Under an arrangement of the type described above, although Harmon Field is not regarded as integral to the public airport system County-wide, it would remain appropriate to show it as a public airport facility in this Plan.

5.1.2 Privately-Owned Public-Use General Aviation Airports

Augmenting the core of the public airports described above, the second key component of the County-wide airport system consists of a group of general aviation airports which are privately owned and operated but which are open to general public use, including both the operation and basing of aircraft. Based upon the premises that public sector airport facilities cannot fully satisfy forecasted aviation demand County-wide, the availability of these private facilities is regarded as important to the adequate serving of local aviation demand. Accordingly, although the ability of those public agencies charged with the responsibility of implementing this Plan to directly assist or otherwise actively affect the continued operation of the region's private airport facilities is very limited, this Plan assumes that such facilities should be accommodated and protected through appropriate land use regulations and other related public policies to the fullest extent possible and encourage and continue meeting a portion of local aviation demand. Realistically, the County will bear the major share of the limited public agency responsibility for this component of the Plan, since all of these facilities lie within the County's zoning and planning jurisdiction and are usually located away from any of the County's incorporated cities. Table 5-2 shows the relationship of the facilities comprising this component of the Plan to the five aviation planning zones.

In terms of based aircraft and annual operations (see Chapter 2.0), Green Acres Airport, located in Visalia, is the most significant of the airports comprising

this component of the County-wide system. At the same time, Green Acres probably is subject to more constraints on its potential long-term growth and utilization as a general aviation airport than any of the other important airports in the County. Residential and other urban land uses are located beneath the airport approach pattern immediately to the south, buffered only by a golf course, and urban development is also encroaching from the east. Moreover, the location of the site with respect to growth patterns in Visalia suggests that the airport property could ultimately have a much higher economic value if developed as a non-airport use. Should the owners of this facility choose to close it at some time in the future, additional impetus might be lent to further develop County-owned Sequoia Field as a public general aviation facility.

Alta Airport and Eckert Field also have significant numbers of based aircraft and annual operations, but are exposed to far fewer constraints on their continued operation than is Green Acres. The future of these facilities is more directly tied to the private judgments of their respective owners than to any externally imposed factor. At present, Alta serves as the principal general aviation facility in the northwestern portion of the County, and like Green Acres, should it be closed to public aviation use at some point in the future, public use pressures on Sequoia Field are likely to increase.

Pruner Airport is the base of operations for only a relatively small number of aircraft at present, and both the runway and buildings, as well as the private access road to the facility, require substantial repairs. The continued viability of this airport as part of the county-wide system will be dependent upon the extent to which the owners make essential repairs.

Synanon Airport, located in the foothills near the unincorporated community of Badger, lies at an elevation of approximately 3,140 feet, and consequently, is generally free of ground fog at times when many valley floor locations are below visual minimums. However, this facility has not been used as an airport since 1981. It should also be noted that substantial need for a fog-free facility was not identified during the preparation of this Plan.

5.1.3 Private, "Special Use" Airports

The third category of airport facilities, comprising the remainder of the County-wide airport system, consists of the number of privately-owned "special use" airports, airfields and landing strips located throughout the County. Included among these facilities are several well-improved aerial applicator bases, such as Moore Field; a number of less fully improved strips used intermittently by agricultural aerial applicators and located variously around the valley floor portions of the County; and an assortment of landing strips developed exclusively to serve individual residences and agricultural properties throughout the County. Also included in this general category, although not privately owned, are the several special use United States Forest Service Landing strips which are located in the interior foothill and mountain regions of the County. Although the proportion of overall County-wide aviation demand these special use facilities satisfy is relatively minimal, they do, nonetheless, relieve some pressure for increased capacity at the public facilities in the County. Consequently, these "special use" private facilities are regarded to be an integral component of the overall County-wide airport system and are specifically recognized in this Plan.

TABLE 5-2

RECOMMENDED PLAN

PRIVATELY-OWNED PUBLIC USE AIRPORTS[1]

	Facility Classification[2]
1) Northwest County/Dinuba	
Alta Airport	BU1[3]
3) Visalia/Exeter/Farmersville	
Green Acres Airport	BU1
4) Southeast County/Porterville/Lindsay	
Eckert Field	BU1
Pruner Field	BU1

1 No projection of future Facilities Classifications was made for private airports since they are not governed by the public.

2 See Appendix A for FAA Facility Classifications used in this table.

3 BU1 = Basic Utility Stage 1.

As is the case with several privately-owned public use airport facilities located in the County, the ability of local public agencies to directly and positively affect the existence and operation of the private, special use airports is limited. Without exception, these facilities are located in the unincorporated portions of the County, and as such, are subject to the County's land use and zoning regulations and controls. Under this Plan, the County would adopt the position that private aviation facilities such as those described herein are a beneficial use and would favorably view their development and maintenance in appropriate zones so long as adjacent and/or nearby land uses as well as priority public airport facilities were not adversely impacted.

5.1.4 Summary of Plan Components

The recommended Plan can be summarized in the following terms:

- A consolidation of the present distribution of public airport facilities in the County, emphasizing the expenditure of public funds for the preservation, maintenance and improvement of five airports: Visalia, Porterville, Tulare, Woodlake, and Sequoia Field.

- Public agency policies accommodating the continued operation and maintenance of various privately-owned airport facilities open to general public use.

- Public agency policies accommodating the development and utilization of private "special use" aviation facilities, so long as conflicts with other appropriate human and land uses can be avoided.

The foregoing Plan is predicated upon the assumption that:

- The public sector cannot reasonably satisfy all forecasted aviation demand in the County.

- Private sector initiatives to satisfy unmet aviation demand forecasts are appropriate and beneficial to the extent they do not detract from related public sector efforts.

5.2 AVIATION POLICIES

The County-wide Airport System Plan has been developed with, and is consistent with, a framework of general regional and County transportation policies as set forth in the adopted Circulation Element and Regional Transportation Plan (RTP). The first chapter of this report restates these policies, which can be generally summarized as providing for the establishment and maintenance of an integrated regional transportation system which enhances the local economic base, is responsive to the social needs of the citizenry, and protects the quality of the Tulare County environment and its resources.

Within this framework, aviation-specific policies reflective of the recommended County-wide airport system plan have been formulated and can be stated as follows:

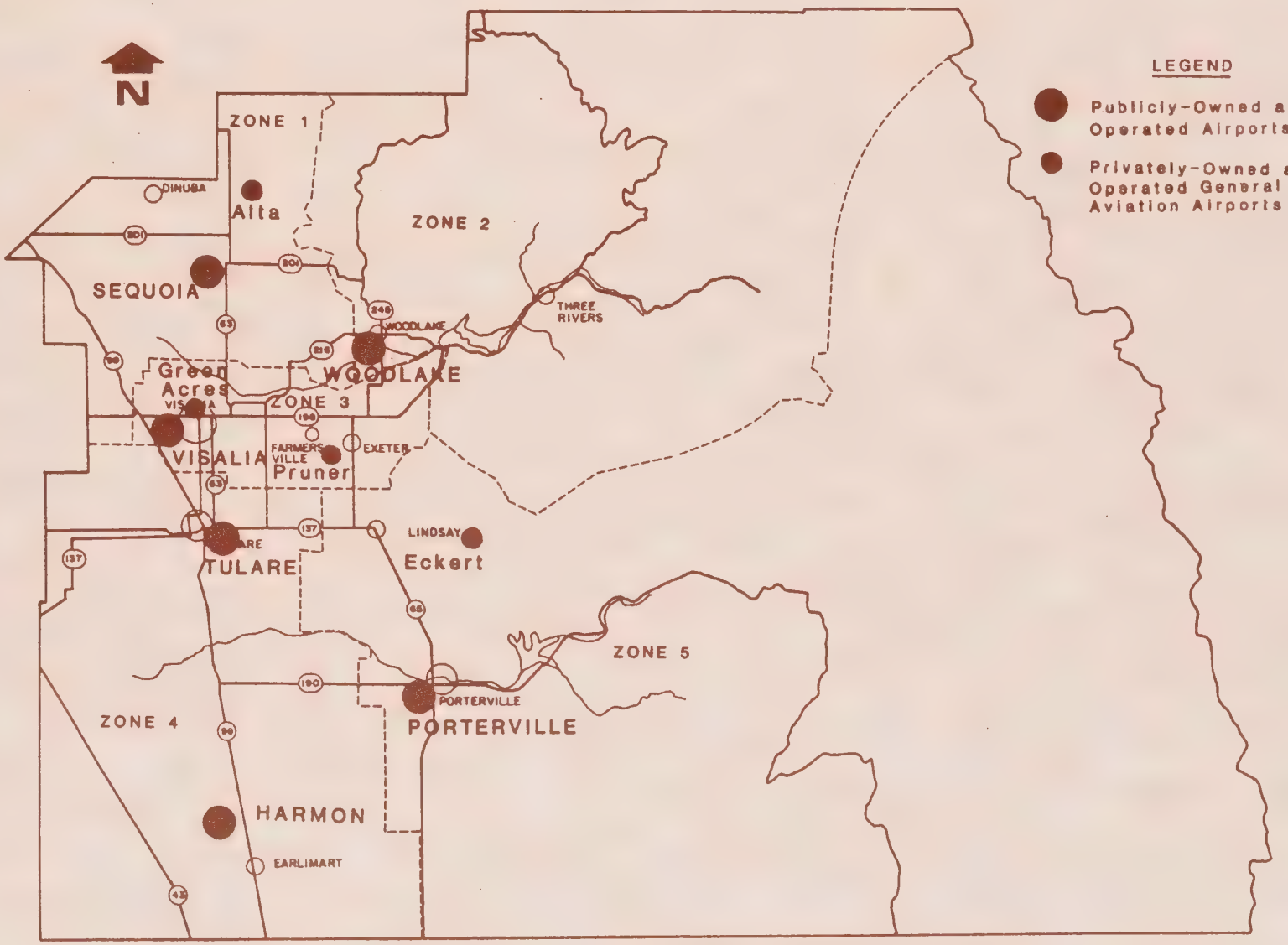
- Aviation activities constitute an important component of the overall regional transportation system. Accordingly, maintenance and enhancement of the County-wide airport system is regarded to be a substantial public interest, meriting continued County and city participation.

- County-wide public airport system development, operation and maintenance should be directed toward servicing as much of forecasted aviation demand as possible within reasonable fiscal constraints. Publicly-owned and operated airports, however, shall not be expected to satisfy all anticipated demand for aviation facilities and related services in the County.

- Development of the County's public airports by the appropriate and responsible public agencies, in conformance with the County Aviation Element and Airport System Plan, shall be encouraged and, in whatever reasonable means possible, facilitated.

- Public agency ownership and operation of airport facilities should be confined solely to facilities judged to provide wide public benefit as set forth in the County Airport System Plan.

FIGURE 5-1



Recommended Tulare County Airport System Plan

- The development and maintenance of privately-owned and operated airport facilities in Tulare County shall be considered desirable as an alternative to public sector satisfaction of all forecasted aviation demand, so long as such development and operation does not conflict with established land use or other public policies and does not result in adverse impacts on the operation, maintenance and long-term viability of the airport facilities designated in this Plan for continued public ownership and/or operation.

The foregoing policies are intended to provide additional guidelines to local public agency decision makers in dealing with airport and aviation-related issues. Implicit in these policies are directions for confronting and resolving several airport-related questions with which the County of Tulare and several of the County's incorporated cities are currently dealing. Specific recommendations for policy implementation with respect to these questions are provided later in this report. Importantly, however, these policies are intended to facilitate the review and rational determination of public positions relative to potential future airport system development issues.

5.3 ENVIRONMENTAL CONSIDERATIONS

It is appropriate, in response to both statutory requirements and commonly-accepted sound planning principles, to review and evaluate relevant environmental considerations in the system plan development and adoption process. Accordingly, the following paragraphs describe those general environmental effects which could be anticipated as a result of the recommended Airport System Plan and introduce various means by which these effects can be minimized to ensure the long-term preservation and protection of the local and regional environment.

The proposed plan of public airport system consolidation will have the long-term effect of concentrating aviation activities in the County at the five designated priority airports to a proportionately greater extent than is true in the present County-wide airport system. This concentration would result not only in higher volumes of aviation activity in the vicinity of these facilities, with attendant noise, pollutant emissions and safety factors being influenced, but would also result in ground-level impacts, such as increased traffic along access routes and the conversion of small amounts of agricultural land to airport facilities use.

The obvious environmental issues associated with the implementation of the "public" component of the recommended plan can be described on an airport by airport basis as follows:

Visalia Municipal Airport - The continued growth of activities at this airport and the expansion of the facility as anticipated in this Plan will result in substantially higher volumes of vehicle traffic to and from the airport site. To mitigate this effect, the City of Visalia has opened an additional east-west access route (Walnut Avenue) as part of its airport expansion plans.

Small increases in internal combustion engine emissions will also result from higher activity levels at this facility, from both air and ground traffic volume increases. The only effective means of mitigating this impact, assuming efficient local traffic flow, is continued improvements and

refinements in vehicle-mounted pollution control equipment. The implementation of this mitigation measure lies beyond the practical authority and capabilities of the County and the City of Visalia, however.

The Visalia Municipal Airport is currently under consideration by the FAA for an Automated Flight Service Station. These stations, of which there are 300 in the United States, provide weather data, flight plans, and serve as information centers for regulating the airside aviation environment. The Visalia facility is also under study by State and local officials for possible future service as a multi-modal transportation terminal.

Noise levels generated by aircraft operations at the Visalia Municipal Airport have been the subject of continuing concern because of the relationship between the airport approach pattern and the unincorporated community of Goshen located immediately to the north. In the recent past, discussions involving the County, the City and representatives of the community have focused on means of reducing the real and potential conflicts between aircraft-generated noise and sensitive residential uses in the community. The adoption of the Goshen Community Plan by the County in 1980 provided for a redesignation of land uses to nonresidential categories for selected high impact areas. To date, some individual properties have been rezoned to reflect their exposure to potential airport related noise impacts; a large portion of the properties involved, however, have not been accounted for in this fashion, in many cases. Exacerbating this problem, an elementary school facility is also located in the sensitive area, and it is unlikely that this facility could reasonably be relocated in the foreseeable future. In addition to zoning and land use controls, mitigation measures which have been discussed previously include alternation of pilot-guided takeoff and landing maneuvers to minimize the extent of time aircraft are operating in positions of conflict with the community. No guidelines or directions in this regard have been promulgated through the airport, however. It should also be noted that the United Airlines withdrawal from Visalia in the recent past, resulting in the discontinuation of jet air carrier service to the airport, has reduced the extent of the noise problem discussed herein. Future efforts to contain potential noise problems associated with the airport within reasonable limitations could emphasize more extensive definition and regulation of takeoff and approach patterns and continued efforts to control the development and maintenance of sensitive land uses in areas of high potential airport noise impact. Continued and extensive cooperation between the City of Visalia and the County will be essential in addressing and resolving this issue.

Porterville Municipal Airport - There are no evident significant environmental concerns associated with the expansion and anticipated future level of operations of the Porterville Municipal Airport as provided in this Plan. Unlike Visalia, the approach patterns to Porterville do not directly conflict with any substantial existing or proposed residential development or other sensitive land uses, and current City and County land use and zoning policies would provide an adequate level of protection to this facility in that regard. Increased air and ground traffic activities, similar to those identified for Visalia, would exist under this Plan as time passes, and the same mitigation measures identified as reasonable or appropriate for Visalia would also apply to Porterville in related areas.

Mefford Field - Forecasted increases in activity at Mefford Field and the expansion and improvements indicated in this Plan for the facility, would generate, on a slightly reduced scale, related impacts similar to those at Visalia and Porterville, mandating essentially the same mitigation efforts. The City of Tulare has taken an aggressive position in recent years in prohibiting development near its airport which would create conflicts with continued airport operations, and this facility, even at the expanded level contemplated in this Plan, would appear to be relatively unconstrained with regard to future operation. Freeway access to the airport is good, and it is not anticipated that future activity levels would generate any significant ground access problems.

Woodlake Airport - Expansion of the Woodlake Airport and its continued operation at a level required to satisfy forecasted future demand does not appear to raise any significant environmental issues. No conflicts with existing or projected sensitive land uses exist; the facility is accessible from a major arterial; and more than adequate area is available on the site for future airport improvements with no impacts on surrounding adjacent properties.

Sequoia Field - Increased levels of activity at Sequoia Field and improvement of that facility as provided for in this Plan would generate, on a reduced scale, the air and ground traffic-related impacts discussed for each of the previous facilities, requiring similar appropriate mitigation measures. More important in the case of Sequoia Field, however, is the relationship of the airport use to the existing and proposed County correctional center facilities on the site. At present, correctional facilities housing prisoners occupy the westerly portion of the site. The addition of a major jail facility is currently being planned for the northwest corner of the site, however, and concern has been expressed at several recent public hearings on this project that this proposed expansion of the site as a regional correctional center and the continued utilization or expansion of the airport at Sequoia Field would be incompatible.

A review of the preliminary plans for the correctional facility development discloses that this facility, as proposed, would not physically constrain access to or expansion of the Sequoia Field airport operations. Neither would flight operations appear to be potentially impeded by encroachment of the proposed facility into necessary aviation easement. The principal area of possible conflict and incompatibility between the two facilities, therefore, would appear to be related to noise impacts associated with airport and aircraft operations. In order to minimize these potential effects of airport and aircraft noise on the correctional center, two mitigation measures are possible: (1) restriction of the type of aircraft, by weight and/or engine type (prop only) utilizing the airport and (2) noise attenuating construction methods for the new correctional facility itself. It is felt that, applied singly or in combination, the foregoing measures should adequately preclude noise-related problems sufficiently to ensure compatible long-term adjacent operations of both the correctional facility and the airport uses at the Sequoia Field site. It should be noted that this conclusion is consistent with the findings of the environmental impact report recently prepared for the correctional center project.

Other Public Airports - No significant or adverse environmental effects are seen associated with the proposed lease agreement revisions at Harmon Field.

5.4 PLAN CONFORMANCE

The recommended plan has been designed to remain in conformance with all known aviation plans and policies relating to Tulare County developed by the Federal Aviation Administration, California State Division of Aeronautics as well as local agencies. It is nearly impossible to achieve total conformance with every directive or policy in existence due to their significant number and complexity. However, the plan is generally consistent with the following documents:

(1) National Airport System Plan, Federal Aviation Administration

(2) California Airport System Plan (under preparation), California State Division of Aeronautics

(3) Tulare County General Plan and the Land Use and Circulation Elements of the General Plan, Tulare County

(4) Airport Master Plans for individual airports in Tulare County (e.g. Visalia, Tulare, Porterville, and Woodlake)

(5) State Transportation Improvement Program, CALTRANS

(6) 1984 Regional Transportation Plan, Tulare County Association of Governments

(7) Land Use and Circulation Plans of individual municipalities in Tulare County (e.g. Visalia, Tulare, Porterville and Woodlake)

(8) FAA Advisory Circular 150/5050-5 "The Continuous Airport System Planning Process"

(9) FAA Advisory Circular 150/5050-6 "Airport - Land Use Compatibility Planning"

(10) FAA Advisory Circular 150/5090-2 "National Airport Classification System (Airport System Planning)"

(11) FAA Advisory Circular 150/5300-4B "Utility Airports Air Access to National Transportation"

It should be noted that the plan differs from the adopted Porterville Municipal Airport Master Plan in one important way. The Airport System Plan described herein addresses a planning period extending to the year 2000, at which time it is envisioned that the Porterville facility will be developed to the Basic Transport airport classification discussed earlier in this report. The Master Plan concludes that the ultimate (1992) classification for the airport should be one class lower, or at the General Utility level. As noted in Section 5.1.1, this is not considered a conflict worthy of concern due to the difference in control years for both aviation demand forecasts and facility development requirements between the County Airport System Plan and the Master Plan.

CHAPTER 6

6.0 IMPLEMENTATION PROGRAM

The purpose of this chapter is to set forth an implementation program to guide the orderly and efficient development of the recommended plan described in Chapter 5.0. This program has been prepared in recognition of three basic considerations: 1) the status of existing aviation facilities and services; 2) aviation activity forecasts by aviation planning zone, and 3) known and anticipated fiscal constraints confronting local government in the County. These considerations dictate the development of an action program for public expenditure which balances the need to serve aviation activity growth with the very real funding restrictions facing nearly all local governments.

Following a description of the recommended airport system improvement program, an analysis of funding requirements and available sources of development funds is presented. This information sets the parameters for a cost and funding analysis of the recommended Plan prepared to support the improvement program mentioned earlier. The final section of this chapter deals with the specific action requirements associated with the recommended Plan and implementation program. It is intended that this section of the report serve as a quick reference guide to the step-by-step development of the airport system envisioned by the Plan.

6.1 AIRPORT SYSTEM IMPROVEMENT PROGRAM

There are three sources of funds available for public airport development: the Federal Airport Improvement Program (AIP; formerly known as ADAP, Airport Development Aid Program), the State of California Aid to Airports Program (CAAP), and local government. Each of these sources will be described in greater detail later in this report. In order to become eligible for these public funds, airport improvement projects must be programmed in the State Transportation Improvement Program (STIP). The STIP is a five-year multi-modal program of transportation improvements for highways, transit and aviation. For Tulare County, it consists of projects identified through the adopted 1984 Regional Transportation Plan prepared by TCAG. As such, the STIP serves as a guide to the development of the State's transportation system in an efficient and coordinated manner.

The airport system improvement program provided herein is intended to serve as the framework for the prioritization and programming of specific airport development projects by local governments. Thus, this program is the "Aviation Element" of the RTP and will be utilized as a guide for funding allocation and project scheduling. The program is presented in Table 6-1 and is described therein with respect to four distinct five-year development periods which are consistent with the control years established in Chapter 3.0 for aviation demand forecasting purposes.

The classification for each of the privately-owned public use airports identified in this program have been held constant throughout the plan period, owing to the lack of public control over the development of these facilities. It is possible that the status of any one of these airports could change in response to either demand fluctuations or financial constraints. Although no finite determination can be made at this time, it is possible that several of these airports will be upgraded by their owners from their existing classifications during the Plan period.

6.2 FUNDING REQUIREMENTS AND SOURCES

Public airport development in Tulare County has been supported in part by federal and State financial assistance through various capital grant programs. Local public funds have also played an important role in the formation of the airport system. Such funds have been used to match federal and State monies, as well as to fund terminal facility construction and other airport improvements. These sources of public aid to airport development will continue to be the primary means by which airport improvements are made, and therefore warrant discussion as a part of the Airport System Plan. The following paragraphs described the federal, State and local funding sources available and some of the more important eligibility and other requirements associated with each.

6.2.1 Federal Funding

Federal assistance from the federal government is generally limited to FAA administered programs. In the past, other sources, such as Housing and Urban Development grants, have been used for airport-related land acquisition, but are considered unreliable as long-term funding sources and therefore will not be reviewed herein. Instead, a brief discussion of the FAA's primary grant program, the Airport Improvement Program (AIP), will be presented.

During the past, ADAP funds received income from three sources: 1) a use tax on civil aircraft, 2) use taxes on aviation fuels, and 3) a tax on the transportation of persons and goods by civil aircraft. ADAP funding required a federal and local matching arrangement for participation in the costs associated with capital improvement projects. In 1980, federal participation for capital projects was awarded on an 80 percent federal and 20 percent local basis. The local match was comprised of either local funds only or a combination of State and local funds. Navigational aids, such as ILS and other landing systems, were eligible for 100 percent financing from the FAA.

The AIP program carries forward virtually the same eligibility requirements and revenue sources of the ADAP program. While funding is available under the AIP program at the present time, the future status of the program pending anticipated federal budget cuts during fiscal year 1986 is unknown.

6.2.2 California Aid to Airports Program (CAAP)

The CAAP program has been developed to assist in establishing and improving a Statewide system of safe and environmentally compatible publicly-owned and operated airports. It is funded by the unreturned motor vehicle tax on the sale of aircraft fuels and includes two primary grant elements: 1) the annual grants to airports program pursuant to State law as set forth in Public Utilities Code (Code) 21682; and 2) the Acquisition and Development (A&D) program which is provided for in Code 21653. State law specifies that the local government sponsor (e.g., Tulare County, City of Visalia, etc.) provide a minimum of 10 percent and maximum of 50 percent matching funds from non-State or federal sources to match any CAAP funds. Matching requirements preclude joint Federal/State/local projects and A&D applications for $10,000 or less in State funds will not be accepted.

TABLE 6-1

RECOMMENDED

AIRPORT DEVELOPMENT PROGRAM

Aviation Planning Zone/Airport	DEVELOPMENT SCHEDULE [1] Period 1[2] 1980-1985	Period 2 1985-1990	Period 3 1990-1995	Period 4 1995-2000
ZONE 1 Northwest County/Dinuba				
Alta Airport	BU 1	BU 1	BU 1	BU 1
Sequoia Field	BU 2	BU 2	BU 2	BU 2
ZONE 2 Northeast County/Woodlake				
Woodlake Airport	BU1	BU 2	BU 2	BU 2
ZONE 3 Visalia/Exeter/Farmersville				
Visalia Municipal Airport	GT	GT	GT	GT
Green Acres	BU 1	BU 1	BU 1	BU 1
ZONE 4 Southeast County/Porterville/ Lindsay				
Porterville Municipal Airport	GU	GU	GU	BT
Eckert Field	BU 1	BU 1	BU 1	BU 1
Pruner Airport	BU 1	BU 1	BU 1	BU 1
ZONE 5 Southwest County/Tulare				
Mefford Field	BU 2	GU	GU	GU
Harmon Field	BU 1	BU 1	BU 1	BU 1

1 BU 1 - Basic Utility Stage 1, BU 2 - Basic Utility Stage 2, GU - General Utility, BT - Basic Transport, GT - General Transport.

2 Staging of airport improvements was based on the status of existing airport facilities as described in the Airport Inventory, and Aviation Activity Forecasts contained in Chapter 3.0

Airports must be included in the California Airport System Plan (CASP) in order to have improvement projects eligible for inclusion in the State Transportation Improvement Program (STIP). Once programmed therein, these projects may utilize State funds from the CAAP program, based on the matching requirement noted earlier.

The annual Grant component of the CAAP may be used only for the acquisition of general aviation fueling facilities which are owned, controlled and operated by, or for, the airport sponsor. Also, an annual allocation of $5,000 is allocated to eligible public entities and may be used for the maintenance of any capital improvement which was or could have been constructed, in whole or in part, with CAAP funds. Such maintenance must, however, be for the repair or replacement of such a capital improvement. Airport personnel, equipment, and supplies are explicitly excluded from eligibility. These funds may be accumulated for a three-year period.

The A&D component of the CAAP is intended to assist local airport-owning entities in the funding of only capital projects at their airports. The State has developed rules which establish minimum and maximum airport design standards for State funding participation in general aviation airport improvement programs. Most of the current airport projects receiving funding through the CAAP A&D program are either safety-oriented or for purposes of maintaining, preserving, or maximizing the use of existing runways, taxiways and aircraft parking facilities.

The California Transportation Commission (CTC) has authority and responsibility for the discretionary allocation of funds under the A&D component of the Aeronautics Program. Each year, funding allocations are made based on projects submitted through the STIP process. It should be noted that the public ownership requirement mentioned earlier is basic to project approval by the CTC. Ownership is defined as fee interest or a long-term lease of a minimum of 20 years, unless otherwise approved by the Division of Aeronautics.

In addition to the Annual Grant and A&D programs, the State has a California Airport Loan Program authorized through Code 21602. Eligibility for this loan program is similar to the grant programs, however, the inability to finance projects from other sources is an additional criteria imposed. This requirement places the loan program in a secondary role as a funding source with respect to the State airport grant programs.

The State has not placed a maximum dollar amount for loans, but does specify a minimum of $5,000. A maximum loan period of 25 years has been established, wherein repayment is scheduled on an annual basis at a minimum of 1/25 of the total loan principal amount and interest due. The interest rate is assessed at the same rate paid on the most recent issue of State of California bonds sold prior to the date that the loan is approved.

6.2.3 Local Funding

Local funding participation in airport development is a requirement for the preservation of improvement of the airport system in Tulare County. Federal and State grant programs, as noted earlier, are based on the supposition of local government participation in airport development funding. Also, certain airport improvements, such as terminal facilities, must rely entirely on available local funding sources for development. This requires that existing and potential

public airport sponsors prepare for proposed airport improvement projects by programming funds in advance based upon the County's Airport System Plan as set forth herein, as well as the transportation improvement programming process discussed previously.

Revenues obtained from the operation of public airports are important in the determination of federal and State assistance requirements. Airport revenue programs are generally user based and include such sources as tie-down and hangar charges, lease or rental fees, concession fees, and special business income arrangements. Other sources of local funding are general fund allocations, as well as general obligation and revenue bonds.

Although no local funding from private sources is assumed in the Plan, it should be noted that privately owned and operated airports will continue in operation. The contribution of private airport facilities toward the fulfillment of public aviation demand cannot be relied upon due to the lack of governmental control over their operation but, nonetheless, these facilities will remain an important component of the County's aviation system.

6.3 COST AND FUNDING ANALYSIS

The airport system improvement program for the recommended Plan described in Section 6.1 establishes a basis for estimating costs for basic capital improvements such as runway, auto parking, aprons, and terminal development. This information has been used to prepare the order-of-magnitude cost estimates shown in Table 6-2. It should be mentioned that detailed cost estimates and revenue analyses are beyond the level of specificity of this Plan and are appropriately the responsibility of the administrators of each airport. Nonetheless, a cost estimate for the airport system improvement program envisioned by the Plan is still necessary to serve as a guide concerning systemwide airport development, as well as to provide an indicator of future funding requirements for individual airport sponsors who must be concerned with budgeting and capital grant preparation. The estimates are shown by 5-year planning periods in Tables 6-3A through 6-3D. It should be noted that all costs are shown in 1981 dollars and no allowance has been made for annual escalation of construction costs, construction engineering fees, or contingency.

Tables 6-3A, B, C, and D summarize airport system improvement costs by aviation planning zone for preselected cost categories as well as by each of the planning periods established earlier. These tables also present information concerning the availability of, and requirements associated with, funding sources for various airport capital improvements. With this information, the County and other airport sponsors may begin the process of programming funds and conducting more detailed cost and revenue studies to support budget development and Plan implementation. Recommendations concerning actions in this regard are contained in Section 6.4 - Action Requirements, wherein immediate follow-up activities designed to ensure timely implementation of the Plan are identified.

In Tables 6A, B, and C the items shown as eligible for federal funding (ADAP grants) would be eligible for State funding (A&D grants) if federal funding were not available. Federal funding has been constant at 90 percent of costs; State funding may vary from 50 percent to 90 percent sharing and thus may require a larger local share of funding.

All State loan projects are required to be revenue-producing to the extent necessary for 25-year loan amortization.

TABLE 6-2

RECOMMENDED
PUBLIC AIRPORT FACILITY ADDITIONS AND COSTS
BY AVIATION PLANNING ZONE

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	County Total
GENERAL AVIATION						
1. Land Acquisition			240,000			240,000
2. Runway			1,250,000		185,000	1,435,000
3. Terminal Buildings	45,000	45,000	735,000	50,000	45,000	920,000
4. Access			271,600			
5. Aircraft Apron Parking						
a. Hangar	86,300	62,500		198,300	178,800	525,900
b. Tie Down	187,400	115,000	831,400	339,400	330,700	1,803,900
6. Auto Parking			(see terminal)	15,900	16,400	32,300
7. Navaids[1]			167,000			167,000
8. Other			340,000			340,000
Total	318,700	222,500	3,835,000	603,600	755,900	5,735,700
COMMUTER						
1. Terminal Bldg/Gates			410,000			410,000
TOTAL	318,700	222,500	4,245,000	603,600	755,900	6,145,700

[1] Estimates for Navaids are supplied for Visalia only.

TABLE 6-3A

RECOMMENDED PLAN
AIRPORT IMPROVEMENT PROGRAM COSTS AND FUNDING
PLANNING PERIOD I
(1981 Dollars)

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	County Total
1981-1985						
1. Land Acquisition			240,000		*b	240,000
2. Runway						
3. Terminal Buildings	45,000		325,000		45,000	415,000
4. Access			271,600		*b	271,600
5. Aircraft Apron Parking						
a. Hangar	86,300				109,400	195,700
b. Tie Down	187,400		165,700		220,700	573,000
6. Auto Parking					7,400	7,400
7. Navaids[1]			167,000		*b	167,000
8. Other			265,000 a		*b	265,000
Total	$318,700		1,434,300		382,500	2,135,500
Eligible for: Federal Funding Item 1,4,5c,8						
Amount ADAP(90%)	168,660		848,070		198,630	1,215,360
Item 7 ADAP(100%)			167,000			167,000
Local Share(10%)	18,740		94,230		22,070	135,040
State Annual Grant Program Item 3,5a,6	5,000/yr (if desired)		5,000/yr (if desired)		5,000/yr (if desired)	
State Loan Program Items 3,5a,6 (if revenue producing)	$131,300		325,000		$161,800	618,100

a Visalia Airport Master Plan includes $155,000 for utility extension and $35,000 for security fencing.

b Tulare Airport Master Plan includes items for which phasing schedule and cost estimates are not available: chain link fence, resurfacing taxiways to main runway, installation of a navigation beacon, access road to tie-down area, and construction of a water-supply well.

TABLE 6-3B

RECOMMENDED PLAN
AIRPORT IMPROVEMENT PROGRAM COSTS AND FUNDING
PLANNING PERIOD II
(1981 Dollars)

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	County Total
1986-1990						
1. Land Acquisition						
2. Runway			700,000		185,000	885,000
3. Terminal Buildings		45,000	410,000			455,000
4. Access						
5. Aircraft Apron Parking						
a. Hangar		62,500			69,400	131,900
b. Tie Down		115,000	500,000		110,000	725,000
6. Auto Parking					9,000	9,000
7. Navaids[1]						
8. Other			75,000[a]			75,000
Total		$222,500	1,685,000		$373,400	2,280,900
Eligible for: Federal Funding Items 2,5c,8						
Amount ADAP(90%)		103,500	1,147,500		265,500	1,516,500
Local Share(10%)		11,500	127,500		29,500	168,500
State Annual Grant Program Items 5a,6		5,000/yr (if desired)	5,000/yr (if desired)		5,000/yr (if desired)	
State Loan Program Items 3, 5a,6 (if revenue producing)		$107,500	410,000		$ 78,400	595,900

[a] Visalia Airport Master Plan includes $75,000 for grading and site utilities for FBO lease parcels.

TABLE 6-3C

RECOMMENDED PLAN
AIRPORT IMPROVEMENT PROGRAM COSTS AND FUNDING
PLANNING PERIOD III
(1981 Dollars)

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	County Total
1991-1995						
1. Land Acquisition						
2. Runway						
3. Terminal Buildings				50,000		50,000
4. Access						
5. Aircraft Apron Parking						
a. Hangar				198,300		198,300
b. Tie Down			165,700	339,400		505,100
6. Auto Parking				15,900		15,900
7. Navaids[1]						
8. Other						
Total			165,700	603,600		769,300
Eligible for: Federal Funding Items 1,4,5c,8						
Amount ADAP (90%)			149,130	305,460		454,590
Local Share (10%)			16,570	33,940		50,510
State Annual Grant Program Items 3,5a,6				5,000/yr (if desired)		
State Loan Program Items 3,5a,6 (if revenue producing)				264,200		264,200

[a] Visalia Airport Master Plan includes $75,000 for grading and site utilities for FBO lease parcels.

TABLE 6-3D

RECOMMENDED PLAN
AIRPORT IMPROVEMENT PROGRAM COSTS AND FUNDING
PLANNING PERIOD IV
(1981 Dollars)

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	County Total
1995-2000						
1. Land Acquisition						
2. Runway			550,000			550,000
3. Terminal Buildings						
4. Access						
5. Aircraft Apron Parking						
a. Hangar						
b. Tie down						
6. Auto Parking						
7. Navaids[1]						
8. Other						
Total			$550,000			$550,000
Eligible for:						
Federal Funding						
Items 2						
Amount ADAP (90%)			495,000			495,000
Local Share (10%)			55,000			55,000

6.3.1 Local Financial Involvement

Tables 6-2 through 6-3D describe the airport improvement program for the recommended Plan and serve as a basis for outlining the level of local financial involvement required to ensure program implementation. This portion of the report provides such an outline based on the information contained in Section 6.2 - Funding Requirements and Sources. This information was utilized to arrive at the funding source assignments shown in Tables 6-3A through 6-3D.

Under the "best case" condition, or minimum requirement for local funding, as represented by the funding source breakdown shown in the Tables mentioned earlier, the total annual level of local financial commitment required can be calculated. Table 6-2 shows an example calculation assuming an even distribution of local matching and state loan program local expenditure over each of the established planning periods. This is a hypothetical case, but is considered representative of the anticipated annual program costs to local government. Each planning period was assumed to be 5 years in length and debt service costs for the California Airport Loan Program were estimated on the basis of 25 year loan periods, each beginning at the first of the planning period shown.

TABLE 6-4

AIRPORT IMPROVEMENT PROGRAM
LOCAL FUNDING REQUIREMENTS[1]

	PLANNING PERIOD	TOTAL COST CAPITAL IMPROVEMENTS	NON-LOCAL AIP/CAAP SHARE	LOCAL AIP/CAAP SHARE	CALIFORNIA AIRPORT LOAN PROGRAM[2]	ANNUALIZED TOTAL LOCAL FUNDING REQUIRED[3]
1.	1981-1985	$2,135,500	$1,382,360	$135,040	$ 618,100	$107,400
2.	1986-1990	2,280,900	1,516,500	168,500	595,900	179,500
3.	1991-1995	769,300	454,590	50,510	264,200	165,900
4.	1996-2000	550,000	495,000	55,000	-	138,200
		$5,735,700	$3,848,450	$409,050	$1,478,200	$147,750 (AVG.)

[1] See Tables 6-3A through 6-3D for local share and loan program assumptions. All estimates are in 1981 dollars.

[2] See Section 6.2.2, page 6-4

[3] Average annual local share amount plus annual debt service for each loan accumulated by period. A 25-year loan period and 10% interest rate were assumed. It should be noted that debt service would continue through the year 2016 for the last loan issued in 1991.

Table 6-4 shows that the annual amount of local funds required for capital grant local match and airport loan debt service range from $105,900 in planning period 1, to $176,700 in period 2. The adopted Regional Transportation Plan (RTP) for Tulare County does not include information concerning programmed airport improvements in a form which allows a direct comparison between existing local funding for airport improvements and the amounts required to support the recommended Plan. Nevertheless, it should be noted that the 1980/1981 fiscal year revenues from AIP and CAAP sources in the RTP total $477,000 for Countywide capital improvements, and the RTP Capital Improvement Plan for municipal airports in 1980/81 calls for $764,500 in airport construction. This would exceed, on an annual basis for example, the $2,060,500 worth of capital improvements set forth in the recommended Plan for planning period 1 (1980-1985). Thus, it is demonstrated that the recommended Plan, when analyzed on a year-by-year basis, will not exceed the current general level of capital improvement funding commitment for airports in the County.

Revenues to cover operating costs and local funding shares will be generated from landing fees, lease rents or percentages, fuel taxes and other aviation-related local income. Fees and lease rent renegotiation periods should be phased to correspond with the designated planning periods so that rates can be upgraded to produce adequate revenues as needed.

6.4 ACTION REQUIREMENTS

Several specific actions are warranted by the County and other appropriate public entities and airport sponsors once the adoption of the Aviation Element and County Airport System Plan is finalized. These actions relate to the recommended Plan described in Chapter 5.0 and are set forth below.

1) The existing lease arrangement between the County and its concessionaire at Sequoia Field should be investigated to identify any necessary revisions contained therein given the increased importance placed upon this airport by the recommended plan.

2) The lease agreement held by the County for Harmon Field should also be analyzed to determined what revisions may be necessary, and in what manner these revisions may be accomplished, to improve the current financial position of the County with respect to the facility. The initiation of a long-term lease arrangement between the County and private concessionaires should be explored as a means of encouraging private development of the facility. Lease proceeds should be expended by the County for maintenance of the airport, with excess proceeds, if any, deposited to the County's general fund.

3) Public acquisition or a long-term lease agreement for public operation, which would make Woodlake Airport eligible as a public airport for development funding assistance from the California Department of Aeronautics and the FAA, should be pursued.

4) The recommended Plan places emphasis on the development of several public airports in Tulare County. Each of these airports will require suitable, up-to-date master plans which define the specific facilities requirements and development schedule for airport improvements. The status of each airport's current master plan should be investigated to determine any necessary revisions or updating based on the adoption of the Aviation Element and County Airport System Plan.

5) Sequoia Field is an important element of the recommended Plan and the only public airport without an adopted master plan. It is therefore recommended a master plan for the airport be prepared in response to the airport system plan contained herein.